OPEN SYSTEMS® Accounting Software

OSAS Web™
User's Manual

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This document has been prepared to conform to the current release version of OPEN SYSTEMS Accounting Software. Because of our extensive development efforts and our desire to further improve and enhance the software, inconsistencies may exist between the software and the documentation in some instances. Call your customer support representative if you encounter an inconsistency.

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General Information

The OPEN SYSTEMS® Accounting Software (OSAS™) product line consists of several accounting applications. Each application addresses a different phase of your financial operations; together, they form a powerful accounting solution to your daily and periodic accounting needs.

The Structure of OSAS

Resource Manager™

The Resource Manager application is the foundation or shell of OSAS; it provides the operating environment that holds the other applications. To use OSAS, you must run Resource Manager through an operating system based on Microsoft® Windows95™, Windows 98®, Windows NT®, UNIX®, Linux, or Novell® NetWare®. OSAS operates on LAN systems, across a web server using the OSAS Web program, and within a single computer. After you install Resource Manager, you can use it to install OSAS Web and other applications, modify how each application works, and specify how the overall system operates.

You can install the other applications in any order unless their user's guides specify otherwise.

Base applications

Base applications are designed and produced with the largest possible number of industries in mind. They are most effective when you interface them with each other. Base applications are usually named after common accounting operations. Examples are: Payroll, Inventory, Accounts Payable, Purchase Order, Accounts Receivable, Sales Order, and General Ledger.

OSAS Web

The OSAS Web application provides an interface between an Internet web server and your OSAS data files. With OSAS Web, your customers can access their account information, order statuses and your inventory information using the Internet. They can also place orders through the Web. You can control and limit which of your customers can access your data, and the information to which each customer has access.

The OSAS Web System

Use the OSAS Web system to allow your customers access to selected information from your OSAS data files with any web browser. You must have Internet access and Internet server software in addition to OSAS Web. The Internet server software you use must support *Standard CGI* scripting in order to use it with OSAS Web.

Note

CGI is an acronym for Common Gateway Interface, a method of communicating information from one web page to another. There are two types of CGI scripting standards: Windows CGI and Standard CGI. OSAS Web uses Standard CGI.

A familiarity with *HTML* (Hypertext Markup Language) is recommended if you want to modify the web pages constructed by the Create OSAS Web Login Page and Install Web Server Components functions.

OSAS Web is different from other OSAS applications because of the web interface. It helps to think of the software as two pieces that are joined together—the web server application and the OSAS application.

OSAS Web on the Web Server

The web server application is the part of OSAS Web that your customers will see. It is a connected group of HTML screens, some of which function as menus, and others that display and prompt for information. These screens communicate with OSAS Web using standard CGI scripts.

Your Internet server software must be installed and configured on the web server before you begin to use OSAS Web. The web server can be located on the same computer that you run OSAS on, or it can be located on a different computer. If you choose to use a different computer for a web server, you must be able to communicate between your OSAS system and the web server through a network or modem connection.

The web server and OSAS must be able to communicate because OSAS Web provides several functions that move data files and programs from OSAS to the web server and back again.

If you run your web server on a different system than OSAS, and the two systems cannot communicate directly, you will need to move these files and programs manually using software designed for that purpose, such as FTP (File Transfer Protocol) software.

For details about the HTML screens used with OSAS Web, see chapter 8.

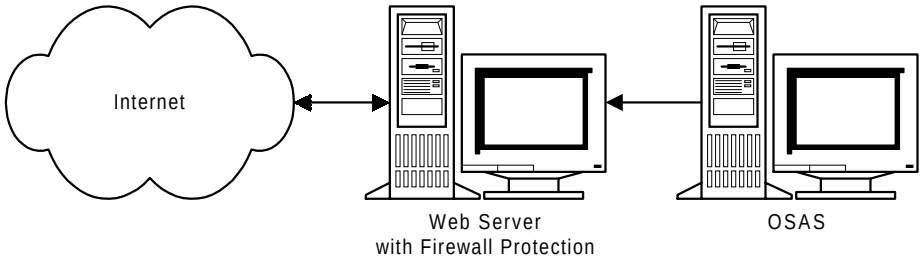
OSAS Web functions in OSAS

The OSAS side of OSAS Web includes several functions that you use to set up and maintain the web server side, including:

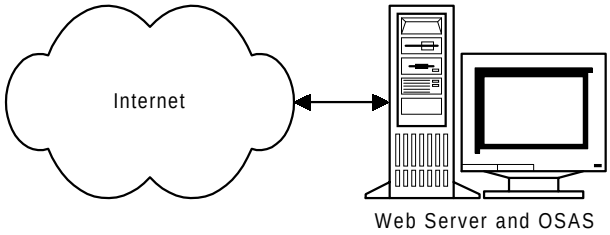
- creating your login page
- determining which companies and inventory items are accessible
- granting access to your customers by assigning them passwords
- moving information between your OSAS system and the web server

Local and Remote Processing

Remote Processing



Local Processing



You can control how the data on your system is accessed when you set up OSAS Web. You have two options regarding data access, *local processing* and *remote processing*.

Local processing allows direct access to your data files. This method provides the most timely information to your customers and is easy to set up and maintain.

Remote processing allows access only to copies of your data files. Remote process is more secure, allowing you to isolate the web server—and Internet users—from your other accounting data.

The method that you choose determines the tasks you need to perform to maintain the OSAS Web system.

OSAS Web Menu Structure

The OSAS Web menu structure is similar to the structure of other OSAS applications: functions appear roughly in order of use.

Sales Order Processing

Use the Sales Order Processing functions to process and track the orders entered through the web server. You can produce a list of new orders, and purge the order log. You can also copy the orders to your OSAS data files if you are using remote processing.

Remote Access

Use the Remote Access functions to copy data files and programs to the web server if you are using remote processing.

File Maintenance

Use the File Maintenance functions to establish groupings for Inventory item display, to add references to graphical pictures of items, and to set up and establish access to your company, item and customer information.

Setup OSAS Web Components

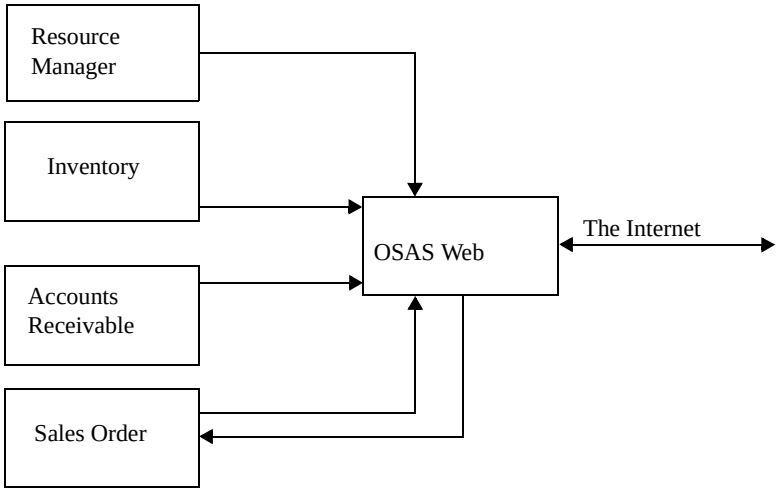
Use the Setup OSAS Web Components functions to create your Web Login Page based on the criteria you set up through File Maintenance, and to install the OSAS Web components on your web server.

Master File Lists

Use the Master File Lists functions to produce listings of the information you entered using the File Maintenance functions. Use the lists to verify your entries or for future reference.

Application Interaction

OSAS Web is an application that translates your OSAS data into fields accessible through the Internet. The information available for access comes from the Inventory, Accounts Receivable and Sales Order applications.



OSAS Web's application interaction means that the information you enter in one application can be transferred to, and used in, other applications. This process reduces data entry time and the number of errors that might creep in along the way.

OSAS Web uses data from Inventory, Accounts Receivable, and Sales Order, displaying this information to users on the Internet requesting the information from your web server. In return, sales orders entered through OSAS Web update your Sales Order files.

You can control which files and data are available to Internet users.

Conventions

Your manual will help you to install OSAS on any standard machine within many popular operating systems and help you with your accounting software questions. In the manual, we use the term “Conventions”, or standards, to help describe complicated processes, new terms, and to help you use your OSAS applications.

Manual Conventions

This User’s Manual is divided into these sections, made up of several chapters:

- The “Introduction” provides an overview of this application and the OSAS system, including installation procedures, graphical and text-based application features, and function key references.
- “Installation” explains the steps necessary to begin using this application in your company, including how to install the application on your system.
- The last part of your manual is made of several chapters, each chapter describing a function group within this application.

Mouse Conventions

The standard mouse has two buttons, left and right, each performing certain functions. In this manual, we use these terms for using the mouse: *click, right-click, double click*, and *deselect*.

The *click* is a single press on the left mouse button. Place the cursor over the desired function, and press the left button to enable, or “select”, that function.

A *right-click* is a single press of the right mouse button.

To *double-click*, move the cursor over the desired function, and quickly press the left mouse button twice. If there is too long a pause between clicks, the computer may interpret your action as two separate clicks and may not perform the desired function.

To *deselect* an object, move the cursor off the icon or folder onto a blank space within the window and press the left mouse button.

Note

Some mouse manufacturers allow you to change the function of the mouse buttons for those who prefer (for example) to use the mouse with their left hand. In this case, reverse the commands when you use them. For example, a click refers to a single press of the right mouse button, while the term right-click refers to a single press of the left button, and so on.

OSAS Conventions

Operations in OSAS follow conventions, or patterns. The conventions used in OSAS applications are presented below.

Running OSAS

OSAS memory and disk space requirements vary according to the operating system you use and the size of your data file. Consult the *Resource Manager User's Manual* for more information.

Starting OSAS

To start OSAS on a Windows machine, double-click the OSAS icon on the desktop or in the appropriate folder.

To start OPEN SYSTEMS Accounting Software on a non-Windows machine, enter **osas** at the operating system prompt.

The command can recognize three parameters: -t, -c, and -a.

The terminal ID (-t) is the identification code assigned to the terminal you are using to work with OSAS. On multiuser systems each terminal usually has a default ID that was assigned when the terminals were added to the system. Use the -t parameter only when you want to log on with an ID other than the default ID. The terminal parameter is valid only if you are using Resource Manager for LANs.

The company ID (-c) is the identification code assigned to a company. If your system carries two or more companies and you do not enter a company ID, the menu of the company entered by the last person who used the terminal appears.

The access code (-a) is your personal password. Refer to the *Resource Manager User's Manual* for information about assigning passwords.

The most general expression for getting into OSAS takes all the parameters into account. For example, if you are on terminal 2, you want to work with company B, and the password is *lerxst*, specify that information to enter the system:

osas -t T2 **-c** B **-a** lerxst

You can enter the parameters in any order, and you can use any combination. You must leave a space between the parameter mark (-t, -c, or -a) and the parameter itself.

Menu Conventions

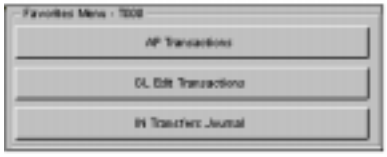
When you start OSAS, the Main menu, which presents the applications you can use, appears. If you are using the Resource Manager for UNIX or DOS, the Text menu appears. If you are using the Resource Manager for Windows, you can choose between the Text Menu, Graphical Menu, or Start Menu. In Windows, use the Workstation Configuration Defaults function in Resource Manager to select the style of menu you want displayed. The following pages describe how you use each of these types of menus.

Favorites Menu

The Favorites menu operates in the text-based format as well as in the graphical formats. The Favorites menu allows quick and easy access to the OSAS functions you use most, allowing you to add selections for entire menus or particular functions.

With the Favorites menu, you save time in no longer switching to and from commonly accessed applications. For example, if you have application entries in Transactions (Accounts Payable), Transfer Journals (Inventory), and Edit Transactions (General Ledger), rather than enabling each application menu by menu, you could set up a Favorites Menu where, with one press of the enter key or a click on the button, your application would be open for work.

Favorites Menu: Graphical Style

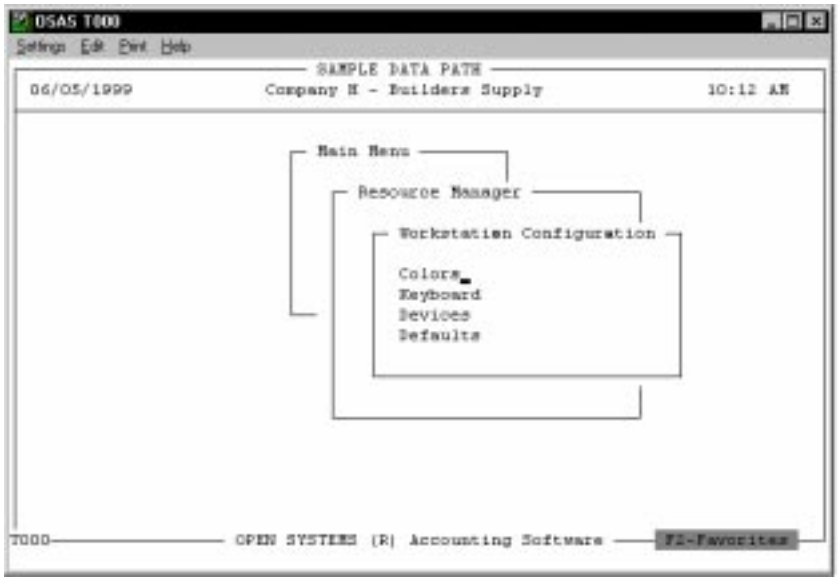


For Favorites Menu set up information, see page 1-29.

Text Menu

The Text menu can be used on all OSAS compatible systems. Using text-based menus, the Text menu (shown below) offers easy access to your applications.

Text Main Menu



When you select an application, the application's menu, which presents several related functions, is superimposed over the Main menu. Selecting a function leads you to a function screen or to another menu.

You can select applications from the Main menu in these ways:

- Use the arrow keys to move the cursor up or down, highlighting the application you want to use. Then press **PgDn** or **Enter** to select it.

- Press the first letter of the application you want to use. The cursor jumps to the first application beginning with the letter, press the letter key or the down arrow until the application you want is highlighted. When your choice is highlighted, press **PgDn** or **Enter** to select it.

- Position the mouse cursor over the application and click. The application will briefly highlight and switch to the application screen.

- To jump to the first application on the menu, press **Home**. To jump to the last application on the menu, press **End**.

To select a function from an application menu, highlight and select your choices the same way you do on the Main menu—with one exception: you can press **PgDn** only when an option leads to another menu, and you must press **Enter** to select a function.

On an application menu you can press **PgUp** to move to the menu immediately above it. If you are several menu levels away from the Main menu, you can return to the Main menu by pressing **PgUp** repeatedly or by pressing the **Tab** key.

You can exit from a menu in these ways:

- Press the **PgUp** key to go to the previous menu (one menu up)
- Press the **Tab** key to go to the Main menu
- Use the **Exit** (**F7**) command to go to the operating system

Function Keys Used in the Text menu

Most keyboards have a set of function keys (usually labeled with the letter *F* and a number). Within the menu, commands are assigned to these function keys. You can use the commands to work with data entry screens.

Except for the **Command Help** (**Esc**), the **Jump** (**Tab**) commands, and the **Enter** key, you can use the Keyboard function in Resource Manager to reassign any function key to any command.

Key	Operation
Esc (Command help)	Views the list of commands for the menu. (To close the commands window, press any key.)
F1 (Function Help)	Displays help information for this function.
F2 (Favorites Menu)	Displays the Favorites menu or changes to the regular menu from the Favorites menu.
F3 (Change Company)	Allows you to switch between companies.
F4 (Access Code)	Displays the Access Code prompt.
F4 (twice) (Other Menu)	Opens a menu of utilities. A calculator and Global Inquiry (which consolidates and presents information from other applications) are some of the utilities on the Other Commands menu. See the *Resource Manager User's Manual* for information about the utilities on the Other Commands menu.
F5 (Live/Sample swap)	Switches between live and sample data.
F6 (Workstation Date)	Displays the current workstation date and allows you to change it.
F7 (Exit)	Exits from OSAS.
F9 (Application Setup)	Allows certain functions to be set up. Works only in certain applications. The application's user's manual will describe the function if necessary.
F10 (Add to Favorites)	Allows you to add to and delete from your Favorites menu.

Key	Operation
Shift + F5 (Change menu style)	Switch between text and graphical menu styles without going into Defaults.
Shift + F2 (Application Info)	Displays information about the applications you have installed.
PgUp (Start over)	Move back one menu level.
Tab (Jump)	Move back to the Main menu.
Enter	Select a menu or function from a menu.
Up Arrow Down Arrow	Move the cursor up or down through the menu selections.
Ctrl + G (Bell on/off)	If the bell is turned on, it sounds at an error or when you must verify a command. To turn off the bell, use this command or the Defaults function in chapter 3. To turn the bell back on, use this command again.

Graphical-Style Menus

There are two types of graphical-style menus to choose from. The standard Graphical menu features application buttons that resemble many Windows functions. The Start Main menu is named because of its functional resemblance to the Start menu in Windows 95 and Windows NT. Featuring graphical displays, access buttons for your installed applications, and allowing access to OSAS functions via both the mouse and function keys, both graphical-style menus allow you a greater selection of interaction with OSAS and your data.

Both graphical-style menus are available in a Windows environment only.

Much like the Text menu, when you select an application in either graphical menu, the application's menu, presenting several related functions, is displayed beside the Main menu. Selecting a function leads you to a function screen or to another menu.

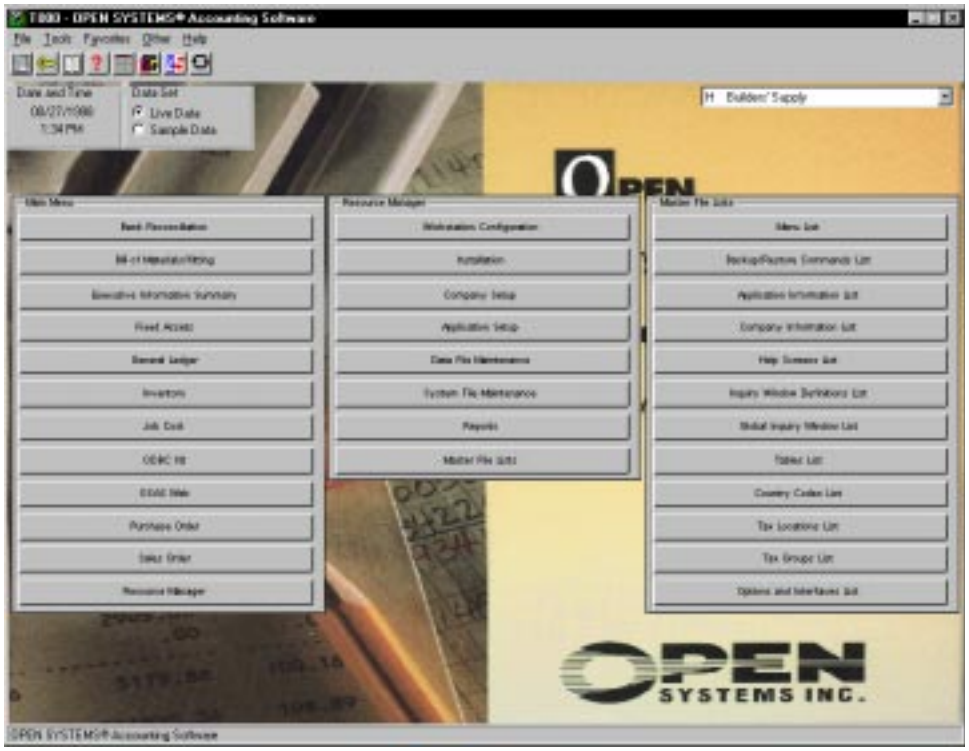
If you are using the Graphical menu, click the appropriate button with the mouse to select an application from the Graphical menu. To select a function from an application menu, click the function's button with the mouse the same way as you do for an application.

If you choose the Start menu you can select applications from the Main menu in these ways:

- Use the arrow keys and press **Enter**
- Click the selection
- Hold the mouse over the selection

From any application menu, you can select a button from the previous menu to move directly to that menu. If you are several menu levels away from the Main menu, you can return to the Main menu by clicking items on previous menus.

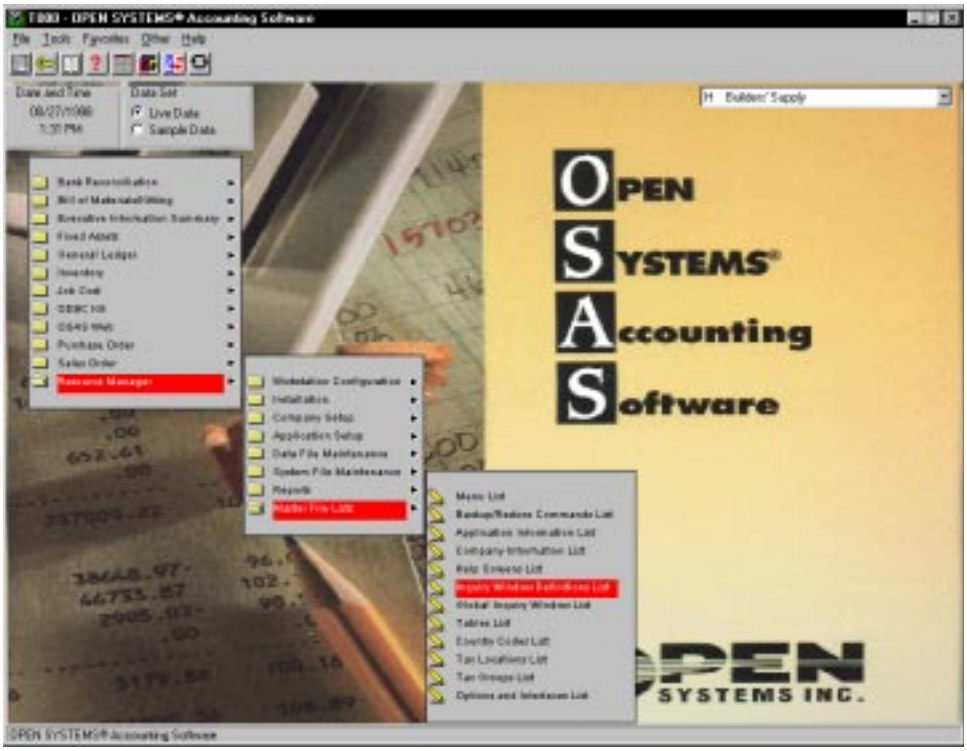
Graphical Main Menu



You can exit from a Graphical menu in these ways:

- select a button from a previous menu
- press the **Tab** key to go to the Main menu
- click the Close box in the upper right hand corner of the window to close OSAS
- use the Exit (F7) command to close OSAS
- select Exit from the File Menu to close OSAS

Start Main Menu



You can exit from a menu in these ways:

- press the left arrow key to go to the previous menu (one menu up)
- hold the mouse over a different menu item
- press the **Tab** key to go to the Main menu
- click the Close box in the upper right hand corner to close OSAS
- use the Exit (F7) command to close OSAS
- select Exit from the File Menu to close OSAS

Special Commands in Graphical menus

Right-click to display the Special Commands menu, which allows you to perform these special tasks:

From the standard menus:

- add a function or menu to the Favorites menu
- change to the Favorites menu
- change from live to sample data and vice versa
- display information about a function
- perform special application setup

From the Favorites menu:

- remove a function or menu
- change to the Main menu
- change from live to sample data and vice versa
- display information about a function
- perform special application setup

Menu Keys

Most keyboards have a set of function keys (usually labeled with the letter *F* and a number). In OSAS, commands are assigned to these function keys.

Key	Operation
F1 (Key Help)	Displays the list of Icons and Functions keys available to you.
F2 (Favorites Menu)	Displays the Favorites menu.
F4 (Access Code)	Displays the Access Code dialog box.
F5 (Live/Sample swap)	Switches between live and sample data.

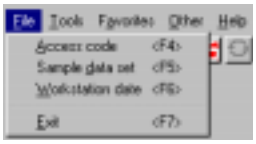
Key	Operation
F6 (Workstation Date)	Displays the current workstation date and allows you to change it.
F7 (Exit)	Exits from OSAS.
F9 (Application Setup)	Allows certain functions to be set up. Works only in certain applications. This application does not use an application setup function.
F10 (Change to Favorites)	Allows you to add to and delete from your Favorites menu. (works only with Start-style menu).
Right-click	Displays the a functions display box.
Shift + F5 (Change menu style)	Switch between text and graphical menu styles without going into Defaults.
Shift + F2 (Application Info)	Displays information about the applications you have installed.

Window Title Bar Menus

When working using the graphical menus, you can use the pull-down menus and *icons* (graphical *tool buttons*) to access functions without using the function keys. While the function keys still work in the graphical menus, the menu bar and icons offers you a choice in how you access certain functions.

Using the mouse, move the cursor to the menu and click once, or, click on an icon for the function desired. Pictured below is the OSAS pull-down menu/icon selection.

File Menu

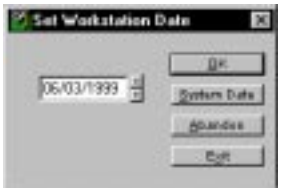


Command	Icon	Key	Result
Access code		F4	Displays the Access Code dialog box. See Access Code dialog box below.
Sample data set or Live Data set		F5	Toggles between the Sample Data and the Live Data.
Workstation date		F6	Displays the Workstation date dialog box. See Workstation Date dialog box below.
Exit		F7	Exits from OSAS.

Access Code dialog box

1. Enter the access code.
2. Click **OK** to save your entry and return to the Main Menu or **Exit** to abandon the dialog box and return to the Main menu.

Workstation Date dialog box



1. Enter the date, or use the up/down buttons to increase or decrease the date.

2. Select **OK** to change the workstation date, **System Date** to change the workstation date to match the operating system date, **Abandon** to exit without changing the date, or **Exit** to return to the Main menu.

Tools Menu

Command	Icon	Key	Result
Calculator			Displays the Windows calculator.

Favorites Menu

Command	Icon	Key	Result
Change to Favorites		F2	Displays the Favorites menu/Main menu. See *Favorites Menu* on page 1-29.

Other Menu

The Other menu contains a set of utilities. A calculator and Global Inquiry (which consolidates and presents data from other applications) are some of the utilities on the Other menu. See the *Resource Manager User's Manual* for information about the utilities on the Other menu.

Help Menu

Command	Icon	Key	Result
Help		F1	Displays the online help.
About OSAS			Displays the About OSAS dialog box.

Toolbar Icons

There are three icons on the toolbar that were not described above.

Icon	Key	Result
		Displays the Application Information dialog box.
		Opens an MS-DOS prompt.
		Displays a screen for calling any BBx program that does not require variables to be passed to it. See the *Resource Manager User's Manual*.

Other Graphical Screen Features

The graphical screens offer more than shortcuts to application functions. With Resource Manager 6.0, you can, at a glance or with a mouse click, determine the date and time, switch between live and sample data, and switch between companies and their data sets.

Date and Time

The workstation date and time are displayed.

Data Set

Check the Live Data radio button to work with live data. Check the Sample Data radio button to work with sample data.

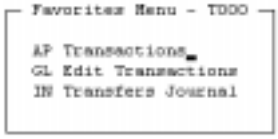
Change Company Field

Select the company to change to.

Favorites Menu

Your Favorites menu saves time in moving between applications, opening and closing submenus and application menus, and allows easy access to your common applications. By setting up your Favorites menu, you can access your most-used functions or submenus by pressing the F2 button (or selecting the mouse pull-down menu).

Favorites Menu: Text Style



There are two ways you can set up your Favorites menu, depending on if you use the text-style menu or the graphical-style menus.

To set up the text-style Favorites menu, follow these steps:

1. Move your cursor to the submenu or application that you want placed in the Favorites menu.

2. Press **F10**.

You can press **F2** to verify your selection was added to your Favorites menu.

To remove an application:

1. Press **F2** to display the Favorites menu.

2. Move your cursor to the submenu or application you want removed.

3. Press **F10**.

Favorites Menu: Start-Style

To set up the graphical-style display (you can find an example of the graphical-style Favorites menu on page 1-14), follow these steps:

1. Position the cursor over the submenu or function you want placed into your Favorites menu.

2. Right-click on the function or submenu. The Favorites menu set up box (shown below) appears.

3. Click on Add to Favorites.

Screen Use

Screen	Description
Add to/Remove Favorites	Use the Add to/Remove Favorites menu button to add the desired submenu or function to or from your Favorites menu.
Change to Favorites/Main	Toggles your display menu between your Favorites menu and your Main menu.
Sample data/Live data	Switches between your sample data and your live data.
Setup	Clicking on this button or pressing **F9** sets up the selected application. Setup works only in certain applications. If an application requires a setup function, you will find instructions in that application's user's manual.
Function Information	Displays information about the selected function.

Function Commands

Once you select an OSAS application function from the menu, the function screen appears. The way that you enter data on OSAS screens is consistent from function to function. To move around the OSAS screens you use the function commands described below.

Most keyboards have a set of function keys (usually labeled with the letter *F* and a number). In OSAS, commands are assigned to these function keys. You can use the commands to work with data entry screens.

Except for the **Command Help** (**Esc**) and **Jump** (**Tab**) commands and the **Enter** key, you can use the Keyboard function in Resource Manager to reassign any function key to any command.

Key	Operation
Esc (Command help)	View the list of commands for the screen you are on and the field you are in. (To close the commands window, press any key.)
F1 (Help)	Get information about the field you are working on.
F2 (Inquiry)	Make a selection from a range of entries for a field if the Inquiry flag appears at the bottom of the screen.
F3 (Delete)	Delete the information on the screen. Since this command can delete an entire record, use it with caution.
F4 (Other)	Open a menu of utilities. A calculator and Global Inquiry (which consolidates and presents information from other applications) are some of the utilities on the Other Commands menu. See the *Resource Manager User's Manual* for information about the utilities on the Other Commands menu.
F5 (Abandon)	Move the cursor back to the first field on the screen or to the first field after the key field. The entries and changes you made are erased.

Key	Operation
F6 (Maintenance)	Go directly to the appropriate File Maintenance function to update information about the field you are in if the Maint flag appears at the bottom of the screen.
F7 (Exit)	Exit from a screen or a window and disregard everything you entered.
F8 (List)	Send the contents of the screen to a printer or a text file.
Shift + F2 (Information)	Open an Information menu. Each selection on the menu is an information window that you can access if the Info flag appears at the bottom of the screen. Each window contains a category of information about the field you are in.
PgUp (Start over)	Move the cursor back to the first field on the screen or to the first field after the key field without erasing the entries or changes you made.
PgDn (Proceed)	Approve the data on the screen, change the file accordingly, and proceed to the next spot (field or screen).
Tab (Jump)	Move the cursor to the next block of data on the screen or to the next field that requires an entry.
Enter or Down Arrow (Enter)	Move the cursor to the next field and accept the data entered.
Up Arrow	Move the cursor up (or back) one field. If you changed the information in the field you were in before you used this command, the change is lost when you move the cursor up.
Ctrl + V (Verification on/off)	If verification is turned on, you must press a key twice to verify that you want to perform that operation.
Ctrl + G (Bell on/off)	If the bell is turned on, it sounds at an error or when you must verify a command. To turn off the bell, use this command or the Defaults function in chapter 3. To turn the bell back on, use this command again.
Ctrl + F (Quick on/off)	If this option is turned off, the cursor stops at every field possible. To make the cursor skip the fields that do not require an entry, use this command to turn the option on.

Key	Operation
Ctrl + O (Show/hide function keys)	If this option is turned on, the applicable function keys are displayed on the screen. If this option is turned off, no keys are displayed.

Help Commands

When you use the **Help** (**F1**) command, three commands become available for you to use on help screens.

Key	Operation
F3 (Delete)	Delete the help screen contents. To recover a deleted help screen, copy the xxHELP file from the distribution media to the /PROGxx subdirectory (*xx* is the application ID). The copying process overwrites changes you made to other help screens.
F6 (Maintenance)	Edit a help screen.
F7 (Exit)	Exit from the help screen and close the window.

In-Field Editing Commands

When the cursor is in a field that contains information, you can use the following keys and commands:

Key	Operation
Right Arrow	Move the cursor to the right.
Left Arrow	Move the cursor to the left.
Del (Delete)	Delete the character the cursor is on.

Key	Operation
Ins (Insert on/off)	Switch insert mode on and off. When the Insert flag appears at the bottom of the screen, characters you type push characters after the cursor off to the side. When insert mode is turned off, characters you type write over existing ones.
Home	Move the cursor directly to the beginning of the field.
End	Move the cursor directly to the end of the field.
F9 (Undo)	Restore a field to the way it was before you changed it. You can use this command only while you are in the field; once you move past it, you must use the **Abandon** (**F5**) command to clear the field.
F10 (Delete to end of line)	Delete the characters in the field to the right of the cursor. If insert mode is turned off and you enter a character in the field's first position, everything in the field is deleted.

Inquiry Commands

When you use the **Inquiry** (**F2**) command, several other commands become available for you to use in the inquiry window.

Note

To shorten your data search, use a partial-key inquiry to cut down the size of the inquiry list. For example, if you know that the ID starts with *J*, enter **J** in the ID field before you use the **Inquiry** command. The inquiry list will start with *J* and run through the end of the list.

Key	Operation
PgUp	Display the previous page of the window.
PgDn	Display the next page of the window.
End	Move directly to the last item on file.

Key	Operation
Home	Move directly to the first item on file.
Down Arrow	Move down one item.
Up Arrow	Move up one item.
Ins (Look up)	Enter a string of information. If you have an idea of what you are looking for and the ID is longer than one character, you can make a partial-key inquiry to cut down the size of the inquiry list. For example, if you know that the ID starts with *J*, enter **J** in the ID field.
F7 (Exit)	Leave the Inquiry window without selecting anything.
Enter	Select the item the cursor is pointing to.
Esc (View commands)	Open a window that shows Inquiry window commands and the window ID.

Inventory Search Commands

If you use the Inventory application and the cursor is in an Item ID field, you can use any of the **Inventory Search** commands to search for information about items and select an item for entry in the field you are in.

Key	Operation
Shift + F3 (Alias Lookup)	Search for items with a specified alias listed as an alternate item. When you enter the alias, you can use the "*****" and "**?**" wildcard characters to restrict or widen the search.
Shift + F4 (Customer/Vendor Lookup)	Search for an item based on customer ID or vendor ID. When you enter the customer or vendor ID, you can use the "*****" and "**?**" wildcard characters to restrict or widen the search.

Key	Operation
Shift + F5 (Detail Lookup)	Search for detailed information about an item. You can enter search information in any of the fields that appear, using any of the following wildcard characters to restrict or widen the search: *** ? < > =**.
Shift + F6 (Lot–Item Lookup)	Search for an item based on lot number. When you enter the lot number, you can use the "*****" and "**?**" wildcard characters to restrict or widen the search.
Shift + F7 (Serial Number–Item Lookup)	Search for an item based on serial number. When you enter the serial number, you can use the "*****" and "**?**" wildcard characters to restrict or widen the search.
Shift + F8 (Item Description Lookup)	Search for an item based on item description. When you enter the description, you can use the "*****" and "**?**" wildcard characters to restrict or widen the search.

Report Commands

You can use the following commands when a report is displayed on the screen:

Key	Operation
PgUp	Move to the previous page of the report.
PgDn	Move to the next page of the report.
Home	Move directly to the top of a group of pages.
End	Move directly to the bottom of a group of pages.
F7 (Exit)	Exit to the menu from any point in the report.
Left Arrow	Move left one character.
Right Arrow	Move right one character.
Tab (Toggle)	Toggle between the left and right halves of a report.

Key	Operation
Up Arrow/Down Arrow	Move a line up and down the screen to line up information when you toggle between halves of a report.

Scroll Region Commands

When the prompt (>) is in a line-item scroll region, you can use the following commands:

Key	Operation
Down Arrow	Move down one line item.
Up Arrow	Move up one line item.
PgUp	Move to the previous screen or to the first line if you are on the first screen.
PgDn	Move to the next screen or to the last line if you are on the last screen.
Home	Move to the first line item in the entire list.
End	Move to the last line item in the entire list.
F3 (Delete)	Delete the line item at the prompt (>).
Ins (Insert)	Insert a line item at the prompt (>).
Enter (Edit)	Edit the line item at the prompt (>).

Reports

Selecting a Range of Information

To produce a report, you must specify the amount of information you want in the report.

- To produce a report that includes all the available information, leave the From-Thru fields on the report function screen blank. For example, if you want information about all the vendors to be in a report, leave the Vendor ID From and Thru fields blank.

- To limit the amount of information in the report, enter the range of information in the From-Thru fields. For example, if you want a report to include information only about vendor ACE001, enter ACE001 at both From and Thru. If you want the report to include information only about vendors that start with CO, enter CO at From and COZZZZ at Thru.

Each field where you enter information on a report function screen usually restricts the overall output of the report. For example, if you leave the Vendor ID From and Thru fields blank, the report will contain information about all the vendors. But if you enter invoice 100 in the Invoice Number From and Thru fields, and invoice 100 is assigned only to vendor ACE001, the report includes information only about vendor ACE001.

Sorting

Information for reports is sorted first by a space (_), then by characters, then by digits, then by uppercase letters, and finally by lowercase letters. No matter what you enter in the From and Thru fields, however, your entries are sorted in alphabetical order (unless the function provides an option to sort the information differently).

Sorting by alphabetical codes or IDs is easy. For example, the ID *ACL* comes before the ID *BB* because A comes before B.

But take notice when you enter codes or IDs that consist of something other than letters; the order might not be what you expect. For example, if 20 items are labeled 1 through 20 and you want all of them to be in a report, you might enter 1 at From and 20 at Thru, expecting them to be listed 1, 2, 3 . . . 19, 20. However, since OSAS sorts in alphabetical order, they are listed in a different order: 1, 10–19, 2, 20, 3–9.

To prevent that situation, pad extra spaces in codes and IDs with zeros so that numbers in alphabetical order are also in numerical order. In the example above the items would be labeled 00000000000000000001 through 00000000000000000020.

Output Device

Report functions screens offer four output options: printer, file, screen, and end.

- When you need a hard copy of a report, select **P**, and either accept the printer that appears or enter the code for the printer you want to use.

  If applicable, select **S** if you want the report to be in standard-size print or **C** if you want it to be in compressed print.

  If you want to stop printing after it has begun, press **Ctrl** + **Break**.

- If you want to save the report as a data file—for example, to include it in a word-processed report (in CR-LF format)—select **F**. The data path for the workstation, including the default drive, appears if it is specified in the Defaults function. Enter the filename and file extension, using no more than 35 characters overall.

- To preview the report—you must be using the Visual PRO/5 Interpreter and have a sysprint printer in your CONFIG.BBX file—select **R**.

  If applicable, select **S** if you want the report to be in standard-size print or **C** if you want it to be in compressed print.

  In the Printer dialog box that appears, select a sysprint printer and press **Enter**. The report is displayed on the screen.

- To view the report on the screen, select **S**. If the workstation default for compressed characters is *inactive*, the report is displayed in standard character mode. If the default is *active*, you can select standard mode or compressed mode. See your terminal documentation and the section on the termcap file in the *User's Reference Guide (PRO/5)*.

  If the message **End of Page** appears at the bottom of the report screen, you can press **Enter** to generate the next page of the report. If the message **End of Report** appears at the bottom of the report screen, you can press **Enter** to exit to the menu you selected the report from.

- If you need to change some selections before you produce the report, select **E** and then press **Enter**. To end the function and return to the menu without producing the report, select **E** and then use the **Exit** (**F7**) command.

Installation and Setup 2

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Installing The Web Server

Before you install and set up OSAS Web, you must install and configure your web server. OSAS Web will work with most popular web servers. However, the web server you use must have the ability to use Standard CGI.

You can install the web server on the same system that OSAS is installed on, or you may choose to install it on a separate computer. If you choose to use a different computer for a web server, you must be able to establish communications between your OSAS system and the web server through a network or modem connection. The web server and the OSAS system *must* be able to communicate because OSAS Web provides several functions that move data files and programs from OSAS to the web server and back again.

When you set up your web server, you need a declaration in your CGI setup to handle BBx programs and graphical images. You must specify a virtual directory for CGI scripts ("/osasweb") and the actual path where you have the OSAS Web programs residing. You must also set up a virtual directory for graphical images ("/image") and the actual path where the graphical images reside. If you have questions about setting up virtual directories, consult your web server user's manual.

The web server must have access to a BBx interpreter in order for OSAS Web to function. If your web server can access your OSAS Resource Manager directory at all times, you can use the interpreter installed there for OSAS Web. If not, you must install a BBx interpreter on the web server itself before you install OSAS Web.

Once you have your web server installed and operational, you can proceed with OSAS Web installation.

Security Procedures and Devices for OSAS Web

Data security is a priority for many companies. OSAS Web is designed to secure your files, customer lists, and account information through use of integral password checks which you setup during your OSAS Web installation. To enhance OSAS Web's built in security codes, you may install a *firewall* for your web server.

A firewall is a generic name for a program or system that enforces access control between two network systems. By requiring any user to enter a password, a firewall acts as a buffer from unwanted access into your system. While they do not protect against viruses, firewalls are recommended to protect sensitive data.

If you have questions and concerns, your reseller could supply you with answers and suggestions.

Note

If you are using a Windows Web Server that accesses data through a UNIX Data Server, see page 4-10.

Installing OSAS Web

When you set up OSAS Web, you can elect to allow access to your OSAS data files directly from the Internet, or to allow access to copies of your files stored on the web server (even if the web server is installed on the same machine). The process of using copies of your files is known as *remote processing*.

If you elect to use remote processing, you must complete a few additional steps after you complete the installation and setup checklist below.

OSAS Web Requirements and Applications

You must have the Accounts Receivable application installed and set up on your system to use OSAS Web. OSAS Web uses your Customer file as a basis for the access codes that allow your customers to access the OSAS Web functions on the Internet.

You have control of which OSAS Web functions can be run, and by which customers. However, some of the functions require other OSAS applications in order to work.

With Accounts Receivable installed, your customers can use the Customer Lookup and Customer History functions.

If Inventory is installed on your system, your customers can access the Inventory Information Lookup function.

If Sales Order is installed, your customers can use the Customer Order Lookup function.

If you have both Inventory and Sales Order installed, your customers can use the Sales Order Entry function.

OSAS Web Setup Checklist

Follow these steps to install and set up OSAS Web on your computer:

Note

Many of the functions you use during the setup process will ask you for path (or directory) names where certain web server files, programs and data files reside. Read the instructions for these functions carefully. Some pathnames describe the directory from the web server to the OSAS system, and others describe the directory from the OSAS system to the web server.

1. Use Resource Manager to install OSAS Web on your computer. See the *Resource Managers User's Guide* for installation instructions.

2. Use the **Internet Companies** function (page 3-11) to set up each company for which you want to provide web access.

3. Use the **Customer Internet Access Codes** function (page 3-19) to control which of your customers can access the OSAS Web functions, and the functions to which each customer has access.

4. Use the **Item Group Codes** function (page 3-3) to set up item groups for item inquiry and sales order entry web functions.

5. Use the **Internet Inventory Item Groups** function (page 3-15) to add items to groups you set up.

6. Use the **Inventory Item Pictures** function (page 3-7) to associate graphic images with inventory items for display in the item inquiry and sales order entry web functions.

7. Use the **Customer Groups** function (page 3-27) to set up the item groups to which each customer has access during the item inquiry and sales order entry web functions.

8. Use the **Tables** function (page 3-31) to set up the EMAIL table, which stores the E-mail address your customers will use to contact you if they encounter problems using the web functions.

9. Use the **Create Login Page** function (page 4-3) to build your login page and to copy it to your web server directory.

10. Use the **Install Web Server Components** function (page 4-7) to set up the communication between the web server and OSAS, and to copy the OSAS Web programs and drivers to the web server.

Note

You may need to edit the CONFIG.BBX file created on the web server after completing the Install Web Server Components function. Consult Appendix D for more information on modifying the CONFIG.BBX file.

Follow these additional steps if you are using remote processing with OSAS Web:

11. Use the **Copy OSAS Programs to Web Server** function (page 6-7) to copy certain special OSAS programs to the web server.

    These programs perform tasks such as accessing inventory quantity and pricing information, calculating balances, and so on. If your web server can access the Resource Manager programs path directly at all times, you can skip this step.

12. Use the **Copy Data Files to Web Server** function (page 6-3) to copy your data files to the web server. You must copy the optional data files when setting up OSAS Web.

Note

Using copies of your data files may provide a higher level of security, but it requires you to update the files periodically on both the OSAS system and on the web server. You can update files using the functions on the OSAS Web menus. See chapter 5 for more information about these periodic tasks.

File Maintenance 3

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Item Group Codes

Features

You use item groups to group inventory items together for display and security purposes on the Inventory Information Lookup and Sales Order Entry web pages. You can restrict access to the items by the groups you set up.

Use the Item Group Codes function on the File Maintenance menu for the following tasks:

- add item groups
- change the description of existing item groups

The groups you create are used to restrict access to your inventory files. You can place the same inventory items in multiple groups, or exclude inventory items from all groups, as you like. You can then specify the groups to which each customer has access.

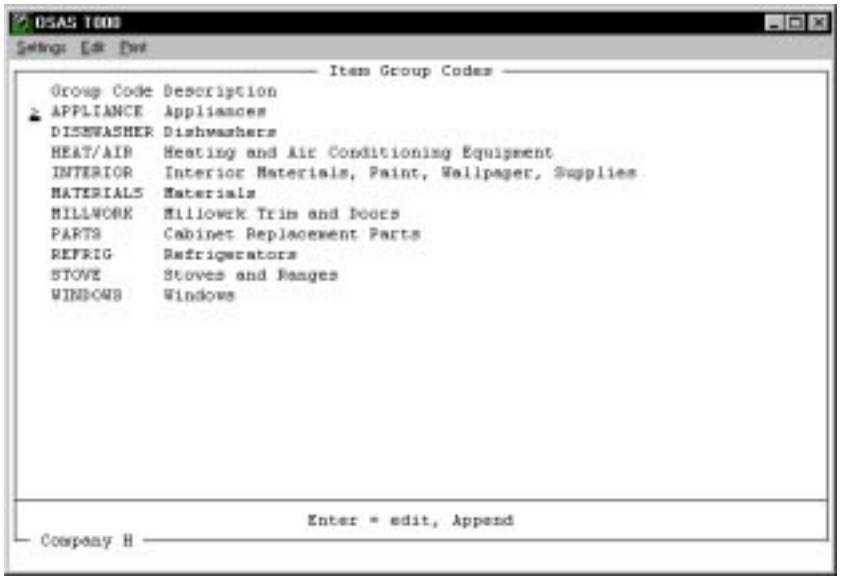
Reports

No report is associated with this function.

Screen Use

Screen	Description
Item Group Codes	Use the Item Group Codes screen to set up or change the item groupings.

Setup Item Group Codes Screen



Field Definitions

Field Name	Description
Group Code	Enter a 1- to 10-character code to identify this group of items.
Description	Enter a description of the group. This description will appear in the selection window on the Inventory Information Lookup and Sales Order Entry web pages.

Command Bar Definitions

Command	Description
Enter = edit	Move the prompt (>) to the group you want to edit and press **Enter**.

Command	Description
Append	Press **A** to add a new item group to the list.
Goto	To move the prompt (>) to a specific item group code, press **G**. Then enter the item group code, or exit to the Item Group Codes screen. (This field appears only if you have more than one screen of item group codes.)

Saving and Exiting

To save your entries, press **Enter** in the Description field. To exit to the File Maintenance menu, use the **Exit** (**F7**) command.

Inventory Item Pictures

Features

Use the Inventory Item Pictures function on the File Maintenance menu to associate a graphics file with your inventory items. The graphic image associated with the item can be displayed through the Inventory Information Lookup and Sales Order Entry web pages.

You can use a variety of graphic image formats, including:

- .JPG JPEG graphics files
- .GIF graphics image format files
- .BMP bitmapped graphics files

Not all graphics formats can be viewed with all browsers. Generally, .GIF and .JPG images are recommended.

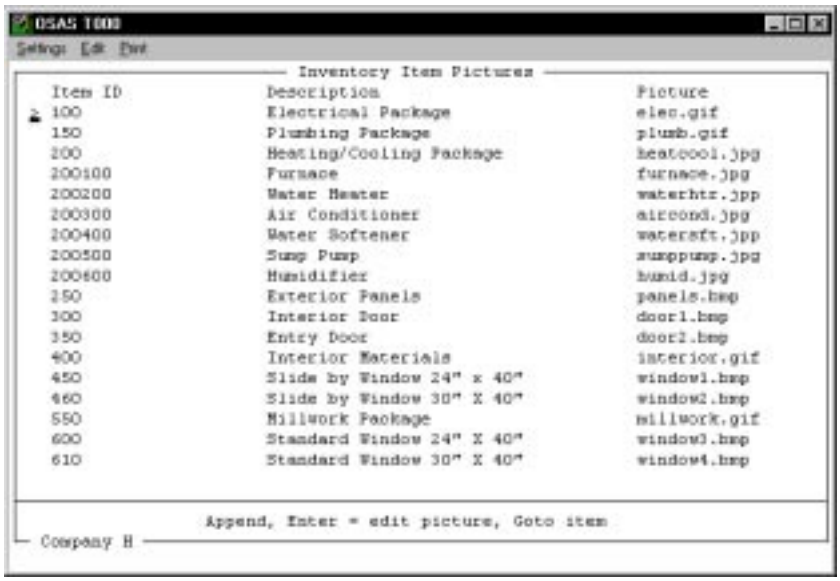
Reports

No report is associated with this function.

Screen Use

Screen	Description
Inventory Item Pictures	Use the Inventory Item Pictures screen to enter or change the graphic image associated with an inventory item.

Inventory Item Pictures Screen


OSAS T000
Settings Edit Print
Inventory Item Pictures
Item ID Description Picture
100 Electrical Package elec.gif
150 Plumbing Package plumb.gif
200 Heating/Cooling Package heatcool.jpg
200100 Furnace furnace.jpg
200200 Water Heater waterhtr.jpp
200300 Air Conditioner aircond.jpg
200400 Water Softener watersft.jpp
200500 Sump Pump sumppump.jpg
200600 Humidifier humid.jpg
250 Exterior Panels panels.bmp
300 Interior Door door1.bmp
350 Entry Door door2.bmp
400 Interior Materials interior.gif
450 Slide by Window 24" x 40" window1.bmp
460 Slide by Window 30" X 40" window2.bmp
550 Millwork Package millwork.gif
600 Standard Window 24" X 40" window3.bmp
610 Standard Window 30" X 40" window4.bmp
Append, Enter = edit picture, Goto item
Company H

Field Definitions

	Field Name	Description
Inquiry	Item ID	Enter the ID of the item with which you want to associate a graphics file.
	Description	The item description appears from the Inventory Item file.
	Picture	Enter the filename of the graphics file, including the extension.

Command Bar Definitions

Command	Description
Enter = edit picture	Move the prompt (>) to the item you want to edit and press **Enter**.
Append	Press **A** to add a picture for a new item.
Goto	To move the prompt (>) to a specific item, press **G**. Then enter the item ID, or exit to the Inventory Item Picture screen. (This field appears only if you have more than one screen of items.)

Saving and Exiting

To save your entries, press Enter in the Picture field. To exit to the File Maintenance menu, use the **Exit** (**F7**) command.

Internet Companies

Features

Use the Internet Companies function on the File Maintenance menu for the following tasks:

- add the current company to the web page
- remove the current company from the web page
- change the default price location or default batch ID for the current company

Reports

No report is associated with this function.

Screen Use

Screen	Description
Internet Companies	Use this screen to add or remove the current company from web access and change the default values used in web functions. Then, use the Create Login Page function to activate your changes.

Internet Companies Screen

OSAS T000
Settings Edit Print
Internet Companies
Company Name Builders' Supply
Default Price Location MN0001
Default Batch ID WEB001
Internet Status Active
Warning: You will need to rebuild your login page, using
the 'Create Login Page' function, and place it in the
document directory of your web server before the changes
you make here will take effect.
Verification
Press <PgDn> to proceed

Field Definitions

	Field Name	Description
	Company Name	The name of the company you selected at the menu is displayed.
Inquiry	Default Price Location	This field appears if you have Inventory installed. Enter the Inventory location that you want to use for the prices that are calculated on the Inventory Information Lookup and Sales Order Entry web screens.
Inquiry	Default Batch ID	This field appears if you have elected to use batching in Sales Order. Enter the batch ID you want to use for sales orders created on the Sales Order Entry web page.

Field Name	Description
Internet Status	To include this company on the web page, enter **A**. To exclude this company from Internet access, enter **I**.

Command Bar Definitions

This screen has no command bar.

Saving and Exiting

To save your entries and exit to the File Maintenance menu, use the **Proceed** (**PgDn**) command.

Internet Inventory Item Groups

Features

Use the Internet Inventory Item Groups function on the File Maintenance menu for the following tasks:

- add inventory items to an item group
- change the inventory locations included in an item group
- remove inventory items or locations from an item group

Item Groups also groups inventory items together for display and security purposes on the Inventory Information Lookup and Sales Order Entry web pages. You can restrict access to the items by the groups you set up.

You can add groups to the system by using the Item Group Codes function on the File Maintenance menu.

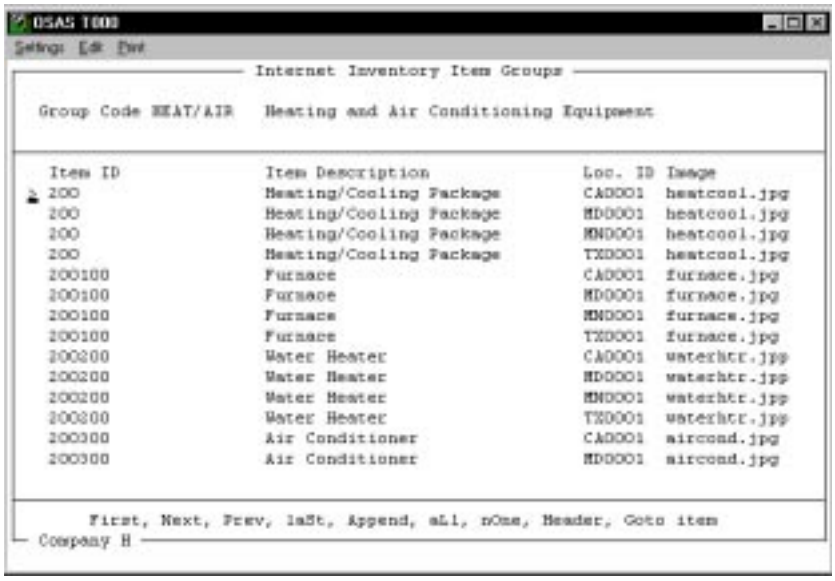
Reports

No report is associated with this function.

Screen Use

Screen	Description
Internet Inventory Item Groups	Use this screen to setup and maintain item groups.

Internet Inventory Item Groups Screen


OSAS T000
Settings Edit Font
Internet Inventory Item Groups
Group Code HEAT/AIR Heating and Air Conditioning Equipment
Item ID Item Description Loc. ID Image
200 Heating/Cooling Package CA0001 heatcool.jpg
200 Heating/Cooling Package MD0001 heatcool.jpg
200 Heating/Cooling Package MN0001 heatcool.jpg
200 Heating/Cooling Package TX0001 heatcool.jpg
200100 Furnace CA0001 furnace.jpg
200100 Furnace MD0001 furnace.jpg
200100 Furnace MN0001 furnace.jpg
200100 Furnace TX0001 furnace.jpg
200200 Water Heater CA0001 waterhtr.jpg
200200 Water Heater MD0001 waterhtr.jpg
200200 Water Heater MN0001 waterhtr.jpg
200200 Water Heater TX0001 waterhtr.jpg
200300 Air Conditioner CA0001 aircond.jpg
200300 Air Conditioner MD0001 aircond.jpg
First, Next, Prev, laSt, Append, aLl, nOne, Header, Goto item
Company H

Field Definitions

	Field Name	Description
Inquiry **Maint**	Group Code	Enter the item group code you want to work with. To set up a new group code, use the Item Group Codes function on the File Maintenance menu, or use the **Maintenance** (**F6**) command.
Inquiry	Item ID	Enter the ID of the item you want included in this group. If you add an item, all the locations for that item are added. If you do not want a location included, you must delete that line item from the group.
	Item Description	The description of the item from Inventory appears.
	Loc. ID	The location ID for this item appears.

Field Name	Description
Image	If you have set up a picture for this item, the graphics filename appears.

Command Bar Definitions

Command	Description
Append	Press **A** to add an item to the group. All locations for this item are added to the list.
First	To look at the items in the first item group on file, press **F**.
Next	To look at the items in the next item group on file, press **N**.
Prev	To look at the items in the previous item group on file, press **P**.
laSt	To look at the items in the last item group on file, press **S**.
aLl	To include all inventory items in this item group, press **L**.
nOne	To remove all inventory items from this group, press **O**.
Header	To return to the screen header to select another group code, press **H**.
Goto item	To move the prompt (>) to a specific item, press **G**. Then enter the item ID, or exit to the Internet Inventory Item Groups screen. (This field appears only if you have more than one screen of items.)

Saving and Exiting

To save your entries, press **Enter** at the Item ID field. To exit to the File Maintenance menu, use the **Exit** (**F7**) command.

Customer Internet Access Codes

Features

You grant Internet access to your data for your customers through Internet access codes. You can limit access for certain customers to particular web pages and item groups.

You can set up multiple access codes for specified customers. This function allows some of your customers' employees access to limited data while others access to more extensive information.

You can also set up *master access codes* that are not associated with a particular customer. For example, these access codes can be used by your sales representatives, to allow them remote access to multiple customers' data. Master passwords cannot match any customer-specific passwords you have set up.

Use the Customer Internet Access Codes function on the File Maintenance menu for the following tasks:

- add access codes for a customer
- change the information that a customer can access
- set up additional access codes for a customer
- set up master passwords for your staff
- remove access for customers

Note

You must set up your customers with access codes before they will be able to access the information on your web site.

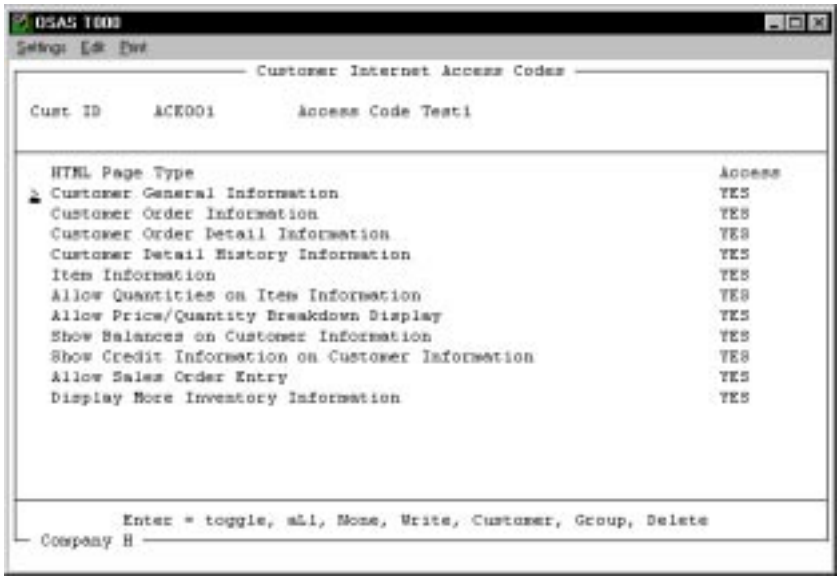
Reports

No report is associated with this function.

Screen Use

Screen	Description
Customer Internet Access Codes	Use the Customer Internet Access Codes screen to enter or change web access information for your customers.
Customer Groups	Use the Customer Groups screen to indicate the inventory item groups that this customer can view through the Item Information and Sales Order Entry web pages.

Customer Internet Access Codes Screen


OSAS 1000
Settings Edit Print
Customer Internet Access Codes
Cust ID ACE001 Access Code Test1
HTML Page Type Access
Customer General Information YES
Customer Order Information YES
Customer Order Detail Information YES
Customer Detail History Information YES
Item Information YES
Allow Quantities on Item Information YES
Allow Price/Quantity Breakdown Display YES
Show Balances on Customer Information YES
Show Credit Information on Customer Information YES
Allow Sales Order Entry YES
Display More Inventory Information YES
Enter = toggle, aLl, None, Write, Customer, Group, Delete
Company H

Field Definitions

	Field Name	Description
Inquiry	Cust ID	Enter the ID of the customer you want to give access to. To set up a master password, leave this field blank.
Inquiry	Access Code	Enter the access code you want to work with. A customer may have multiple access codes.
Inquiry	Copy From Company ID	If you are creating a new access code, you can copy the access parameters from a customer in this company, or in another company. Enter the company from which you want to copy customer access codes, or press **Enter** to set up a code without copying.
Inquiry	Copy From Customer ID	Enter the customer ID from which you want to copy an access code. The customer ID you specify must use the same access code you specified in the Access Code field.

Set each of the access options for this access code as follows:

1. Toggle **YES** or **NO** to indicate whether this customer has access to the Customer General Information Web Page.
2. Toggle **YES** or **NO** to indicate whether this customer has access to the Customer Order Information Web Page.
3. Toggle **YES** or **NO** to indicate whether this customer has access to the Customer Order Detail Information Web Page.
4. Toggle **YES** or **NO** to indicate whether this customer has access to the Customer Detail History Information Web Page.
5. Toggle **YES** or **NO** to indicate whether this customer has access to the Item Information Web Page.

6. Toggle **YES** or **NO** to indicate whether this customer has access to available quantities on the Item Information Web Page.

7. Toggle **YES** or **NO** to indicate whether this customer has access to price and quantity-break data on the Item Information Web Page.

8. Toggle **YES** or **NO** to indicate whether this customer has access to customer aging balances on the Customer Information Web Page.

9. Toggle **YES** or **NO** to indicate whether this customer has access to credit information on the Customer Information Web Page.

10. Toggle **YES** or **NO** to indicate whether this customer has access to the Sales Order Entry web pages.

11. Toggle **YES** or **NO** to indicate whether this customer has access to additional descriptions and pictures on the Item Information and Sales Order Entry web pages.

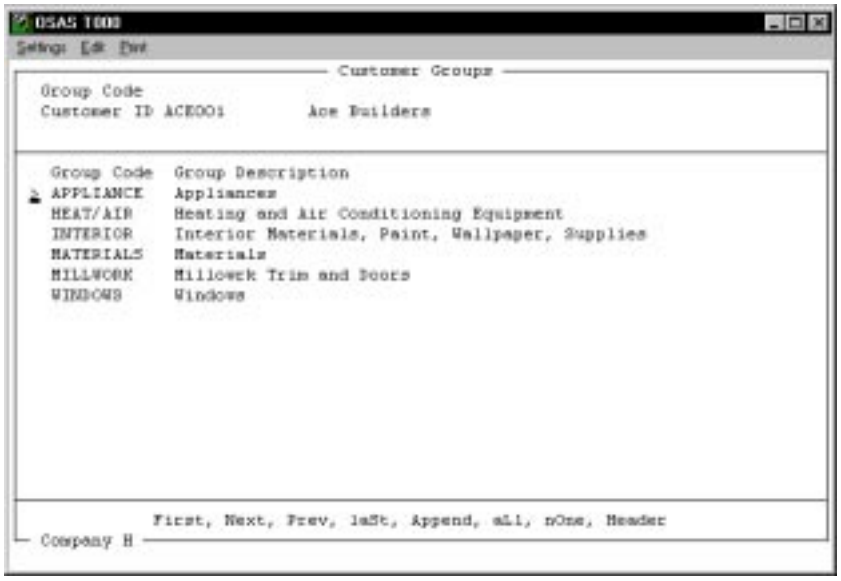
Command Bar Definitions

Command	Description
Enter = toggle	Move the prompt (>) to the option you want to set, and press **Enter** to toggle it (for example, from **YES** to **NO**).
aLl	To set all the options to **YES**, press **L**.
None	To set all the options to **NO**, press **N**.
Write	To save your settings, press **W**.
Customer	To select another customer, press **C**.
Group	To access the Customer Groups screen to set up access to item groups, press **G**.
Delete	To remove this access code for this customer, press **D**.

Saving and Exiting

To save your entries, press **W**. To return to the File Maintenance menu, use the **Exit** (**F7**) command.

Customer Groups Screen



Field Definitions

	Field Name	Description
	Cust ID	The customer ID and name appear.
Inquiry	Group Code	Enter the item group code you want this customer to have access to. To add additional item groups, use the Item Group Codes function on the File Maintenance menu.
	Group Description	The description for this Item Group appears.

Command Bar Definitions

Command	Description
Append	To add an item group to the access list for this customer, press **A**.
aLl	To add access to all item groups for this customer, press **L**.
nOne	To remove access to all item groups for this customer, press **O**.

Saving and Exiting

To save your entries, press **Enter** at the Group code field. To return to the Customer Internet Access Codes screen, use the **Exit** (**F7**) command.

Customer Groups

Features

Use the Customer Groups function on the File Maintenance menu for the following tasks:

- add customer access to an item group
- change the customers that have access to an item group
- remove customer access from an item group

You can work with customers and item groups in two ways. You can either:

- specify a group and enter the customers that have access to it
- specify a customer and enter the groups the customer has access to

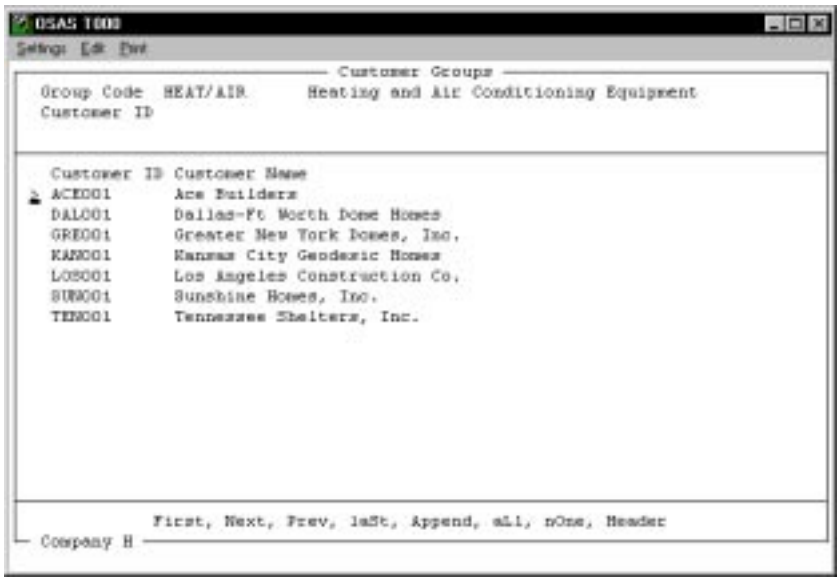
Reports

No report is associated with this function.

Screen Use

Screen	Description
Customer Groups	Use the Customer Groups screen to add or change the customers that have access to an item group, or to change the groups to which a customer has access.

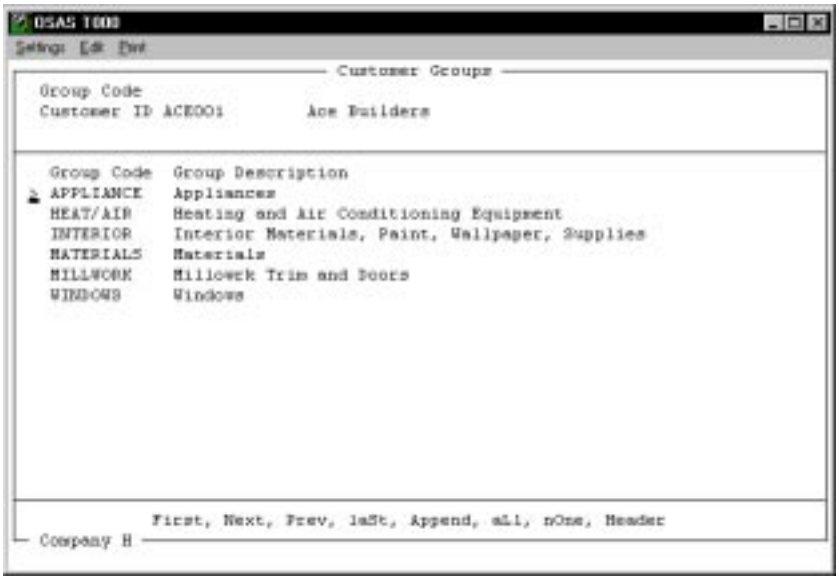
Customer Groups (Item Group) Screen


OSAS T000
Settings Edit Print
Customer Groups
Group Code HEAT/AIR Heating and Air Conditioning Equipment
Customer ID
Customer ID Customer Name
ACE001 Ace Builders
DAL001 Dallas-Ft Worth Dome Homes
GRE001 Greater New York Domes, Inc.
KAN001 Kansas City Geodesic Homes
LOS001 Los Angeles Construction Co.
SUN001 Sunshine Homes, Inc.
TEN001 Tennessee Shelters, Inc.
First, Next, Prev, laSt, Append, aLl, nOne, Header
Company H

Field Definitions

	Field Name	Description
Inquiry **Maint**	Group Code	To list the customers that have access to a specific group, enter the group code. The customers that have access to the group are displayed. To list the groups for a specific customer, leave this field blank.
Inquiry	Customer ID	Enter the ID of the customer to whom you want to grant access to this group.
	Customer Name	The name of the customer appears from the Accounts Receivable Customers file.

Customer Groups (Customer) Screen



Field Definitions

	Field Name	Description
Inquiry **Maint**	Customer ID	To list the groups to which a specific customer has access, leave the Group Code field blank and then enter the ID of the customer you want to view. The item groups to which this customer has access are displayed.
Inquiry	Group Code	Enter the ID of the group to which you want to grant this customer access.
	Group Description	The description of the group appears.

Command Bar Definitions

Command	Description
First	To display the first customer or item group on file, press **F**.
Next	To display the next customer or item group on file, press **N**.
Prev	To display the previous customer or item group on file, press **P**.
laSt	To display the last customer or item group on file, press **S**.
Append	To add a customer or item group to the access list, press **A**.
aLl	To add access for all customers or item groups, press **L**.
nOne	To remove access for all customers or item groups, press **O**.
Header	To return to the header to select a different customer or item group, press **H**.
Goto	To move the prompt (>) to a specific customer or item group, press **G**. Then enter the ID or code. (This field appears only if you have more than one screen of customers or item groups.)

Saving and Exiting

To save your entries, press **Enter** at the Customer ID or Group Code field. To exit to the File Maintenance menu, use the **Exit** (**F7**) command.

Tables

Features

Use the Tables function on the File Maintenance menu to set up and maintain the OSAS Web tables.

Tables store information used by the system and options.

OSAS Web uses four tables:

- The EMAIL table stores the address of the contact person for web problems.
- The HOMEPATH table stores your entries when you use the Create OSAS Web Login Page function.
- The WEBPATH table stores your entries when you use the Install Web Server Components function.
- The COPYPATH table stores your entries when you use the Copy Programs to Web Server and Copy Data Files to Web Server functions.

Note

The HOMEPATH, WEBPATH and COPYPATH tables are automatically created and maintained by the functions described above. You should not change these tables using the Tables function.

Reports

No report is associated with this function.

Screen Use

Screen	Description
Tables	Use the Tables screen to maintain the tables in OSAS Web.

Blank Tables Screen

Field Definitions

	Field Name	Description
Inquiry	Table ID	Enter the ID of the table you want to work with. The EMAIL table is the only table you need to maintain in OSAS Web.
Inquiry	Copy From?	This field appears if you entered a new table ID. Enter the ID of the table you want to copy data from.

Field Name	Description
Description	Enter a description of the table.
Number of Cols	Enter the number of columns in the table.
Column Length	Enter the number of characters in each column.
Type	Enter the type of data to be stored—alphanumeric (**A**) or numeric (**N**).
Column Headings	Enter the column headings for this table as described below for the table you are working with.
Column Data	Enter the column data as described below for the table you are working with.

Command Bar Definitions

This screen has no command bar.

Saving and Exiting

To save your entries, use the **Proceed** (**PgDn**) command. To return to the File Maintenance menu, use the **Exit** (**F7**) command.

EMAIL Table

The EMAIL table stores the electronic mail address that will be shown on the web pages as the customer's contact if any problems occur while viewing information on the web pages.

When you enter the table ID, the rest of the EMAIL table appears.

EMAIL Table Screen

Column Data Definitions

Field Name	Description
Email Address	Enter the Email address of the person in your company who should be contacted in the event of web problems.

Set Up Web Components 4

Create Login Page 4-3
Install Web Server Components 4-7

Create Login Page

Features

Use the Create Login Page function on the Set Up Web Components menu to build the Login Page for the web server. You must run this function to:

- create your OSAS Web Login Page for the first time
- change the title used on the Login Page
- change the colors or graphics used on your web pages

Reports

No report is associated with this function.

Screen Use

Screen	Description
Create Login Page	Use the Create Login Page screen to create and modify your OSAS Web login page.

Create Login Page Screen

Field Definitions

	Field Name	Description
	Login Page Title	Enter a title for your login page.
	Web Server Documents Path	Enter a directory path name to the location on the web server from which web pages are launched.
Inquiry	Background Color	Enter the color to use for the web page background. The name must match a web color choice exactly. You can choose from a list of these colors using the **Inquiry** (**F2**) command.
Inquiry	Text Color	Enter the color to use for the web page text. The color name must match a web color choice exactly. You can choose from a list of these colors using the **Inquiry** (**F2**) command.

Field Name	Description
Background Image	You may specify a graphic image that will be used as a background for your web pages. If the graphic image is found, it will be used instead of the background color you specified. The web server will expect to find the graphic file in a virtual directory named */image* from the root directory of the web server (see page 2-3 for more information about virtual directories).

Command Bar Definitions

This screen has no command bar.

Saving and Exiting

To save your entries and create your login page, use the **Proceed** (**PgDn**) command. When the page is created, the Set Up Web Components menu appears.

Install Web Server Components

Features

Use the Install Web Server Components function on the Set Up Web Components menu to copy the components that are required for OSAS Web to the web server. This function copies the various OSAS Web web pages and web drivers.

The information copied to the web server is divided into three categories:

- Web server programs, including the OSAS Web programs, scripts and batch files
- Data files, including the OSAS Web, Accounts Receivable, Sales Order and Inventory files, copied by the Copy Data Files to Web Server function
- Resource Manager programs, including the applications programs used in calculating prices, aging customers, and so on, copied by the Copy Programs to Web Server function

In this function you tell OSAS Web where this information is stored. You need to describe how to reach the web server from the OSAS system, and how to access the information from the web server.

If you use local processing, the programs and data files will reside on the same system where OSAS is installed. If you use remote processing, the programs and data files will reside on the web server.

Note

If you are using a Windows Web Server that accesses data through a UNIX Data Server, see page 4-10.

For a list of the files copied, see appendix C to this manual.

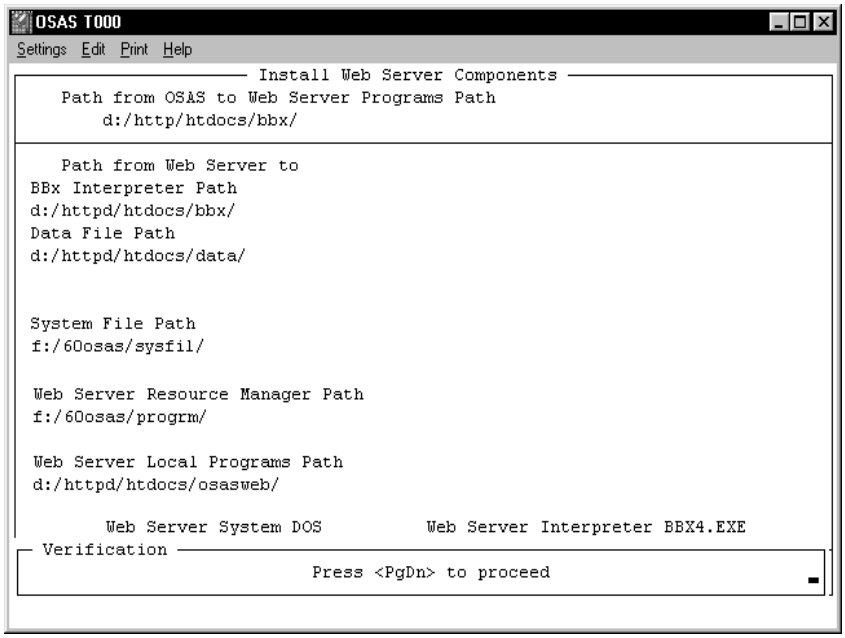
Reports

No report is associated with this function.

Screen Use

Screen	Description
Install Web Server Components	Use the Install Web Server Components screen to copy the necessary OSAS Web files to your web server.

Install Web Server Components



Field Definitions

Field Name	Description
Web Server Programs Path	Enter the full path from the OSAS system to the web server programs path.
BBx Interpreter Path	Enter the full path from the web server to the location of the BBx Interpreter.
Data File Path	Enter the full path from the web server to the OSAS data files. If you use remote processing, enter the path where the data file copies are kept.
System File Path	Enter the full path from the web server to the OSAS sysfil path. If you use remote processing, enter the path where the sysfil copies are kept.
Web Server Resource Manager Path	Enter the full path from the web server to the location of the Resource Manager programs.
Web Server LocalProgramsPath	Enter the full path to the /osasweb directory on the web server.
Web Server System	If the web server resides on a UNIX/Linux system, enter **U**. If the web server resides on Novell or Windows 95/98 or NT, enter **D**.
Web Server Interpreter	Enter the interpreter that will be used by the web server on UNIX or Linux systems. Enter **P** for PRO/5. On Novell or Windows 95/98 or NT systems you can also enter **V** for Visual PRO/5.

Command Bar Definitions

This screen has no command bar.

Saving and Exiting

To save your entries or begin the copy process, use the **Proceed** (**PgDn**) command. When the copy process finishes, the Set Up Web Components menu appears.

Windows Web Server/UNIX Data Server

If you are using a Windows Web Server that accesses data through a UNIX Data Server, you must set up a UNIX user ID on the UNIX Data Server.

On the UNIX computer accessing the OSAS Web data files, set up “osasweb” as a UNIX user ID.

Note

If you do not want to use osasweb as your user ID, you must change the userid entries in the OW*.tmp files in the ProgOW directory. Edit the OW*.tmp files **before** you use the Install Web Server Components function.

Sales Order Processing 5

Transaction Journal	5-3
Build Sales Orders from Remote Files	5-7
Purge Log File	5-11

Sales Order Processing on the Web

If you allow your customers access to the sales order processing functions on the web, you use the functions on the Sales Order Processing menu.

When you set up OSAS Web, you can elect to allow access to your OSAS data files directly from the Internet, or to allow access to copies of your files stored on the web server. The process of using copies of your files is known as *remote processing*. See chapter 2 for more information about remote processing.

When your customers enter sales orders through the Internet, OSAS Web stores the orders as quotes in the Sales Order Header and Detail files. If you are using remote processing, OSAS Web uses the files kept on the web server. If not, OSAS Web uses the same files used in Sales Order Processing. In either case, OSAS Web keeps a log file of the orders that have been entered, and any comments customers enter along with their orders.

Use the functions on the Sales Order Processing menu on a daily basis, as follows (skip steps 2 and 4 if you do not use remote processing):

1. Print the Transaction Journal to list the orders that have been entered along with any comments from the customers.

2. If you use remote processing, run the Build Sales Orders from Remote Files function to transfer your customers' orders from the remote data files to your live OSAS data files.

3. Use the Purge Log File function to prepare the log file for the next day's entries.

4. If you use remote processing, run the Copy Data Files to Web Server function on the Remote Access menu.

Transaction Journal

Features

The Transaction Journal produces a list of the orders entered on the web site. This list serves as an audit trail of the transactions, as well as an edit register to check for necessary changes or incomplete entries.

If you are using remote data files, you can print the Transaction Journal before moving the orders to your live Sales Order files as an audit trail. When you use the Build Sales Orders from Remote Files function, this report will reprint automatically to show any order number changes that have been made in the copy process.

Reports

A sample Transaction Journal is on page 5-6.

Screen Use

Screen	Description
Transaction Journal	Use the Transaction Journal screen to specify the location of the log file.

Transaction Journal Screen

Field Definitions

Field Name	Description
Web Server Programs Path	The location of the OSAS Web directory on the web server appears. Press **Enter** to accept the path shown, or enter a different path.

Command Bar Definitions

Command	Description
Printer	Select **P** to send the report to a printer.
File	Select **F** to send the report to a file.
Screen	Select **S** to send the report to the screen.

Command	Description
End	Select **E** to change your entry or exit to the Sales Order Processing menu.

Saving and Exiting

After the report is produced, the Sales Order Processing menu appears.

Transaction Journal Report

```
02/12/1999                    Builders Supply                    Page   1
12:51 PM                      Transaction Journal

Order No. Date      Time     New Order No.  Additional Comments
---------- --------- -------- -------------- ------------------------------

00000142  02/12/1999 12:47 PM                Please process promptly.
00000144  02/12/1999 12:49 PM
00000145  02/12/1999  1:10 PM
00000146  02/12/1999  1:22 PM                Note Shipping Address Change.
00000149  02/12/1999  4:18 PM                May substitute standard window.


End of report
```

Build Sales Orders from Remote Files

Features

You can elect to allow access to your OSAS data files directly from the Internet, or to copies of your files which have been placed on the web server. The process of using copies of your files is known as *remote processing*. See chapter 2 for more information about remote processing.

Use the Build Sales Orders from Remote Files function on the Sales Order Processing menu to copy orders entered through the web to quotes in your OSAS Sales Order data files.

Note

Do not use this function if you are not using remote processing with OSAS Web. When you elect not to use remote processing, the orders are entered as quotes directly into your OSAS files.

Because remote processing uses a different set of Sales Order files, the order numbers may change when you copy the orders to the live system. This function reprints the Transaction Journal after the copy to show the new order numbers assigned during the copy process.

Reports

A sample of the Build Sales Orders from Remote Files Log is on page 5-10.

Screen Use

Screen	Description
Build Sales Orders from Remote Files	Use the Build Sales Orders from Remote Files screen to provide the location of the order log file and the remote OSAS data files, and to specify the batch ID to use when copying the orders.

Build Sales Orders from Remote Files Screen

Field Definitions

Field Name	Description
Web Server Programs Path	The Web Server Programs path you used in the Install Web Server Components function appears. Press **Enter** to accept the path shown, or enter a different path.

Field Name	Description
Remote Data Files	The Remote Data Files path you used in the Install Web Server Components function appears. Press **Enter** to accept the path shown, or enter a different path.
Destination Batch ID	Enter the batch ID you want to use for the quotes that are created during the copy process.

Inquiry

Command Bar Definitions

Command	Description
Printer	Select **P** to send the log to a printer.
File	Select **F** to send the log to a file.
End	Select **E** to change your entries or exit to the Sales Order Processing menu.

Saving and Exiting

When the orders have been copied and the log prints, the Sales Order Processing menu appears.

Build Sales Orders from Remote Files Log

```
02/12/1999                  Builders Supply                    Page   1
12:51 PM          Build Sales Orders from Remote Files

Order No. Date     Time    New Order No.  Additional Comments
---------- ---------- -------- ---------- ----------------------------------------

00000142  02/12/1999 12:47 PM 00000155     Please process promptly.
00000144  02/12/1999 12:49 PM 00000156
00000145  02/12/1999  1:10 PM 00000157
00000146  02/12/1999  1:22 PM 00000158     Note Shipping Address Change.
00000149  02/12/1999  4:18 PM 00000159     May substitute standard window.


End of report
```

Purge Log File

Features

Use the Purge Log File function on the Sales Order Processing menu to clear the log file for new orders. If you use remote processing, you should use this function after you Build Sales Orders from Remote Files.

Note

You should print the Transaction Journal before you run this function to preserve an audit trail of the orders that have been entered.

Reports

No report is associated with this function.

Screen Use

Screen	Description
Purge Log File	Use this screen to specify the path where the log file resides.

Purge Log File Screen

Field Definitions

Field Name	Description
Web Server Programs Path	The web server programs path you used in the Install Web Server Components function appears. Press **Enter** to accept the path shown, or enter a different path.

Command Bar Definitions

This screen has no command bar.

Saving and Exiting

To begin the purge process, use the **Proceed** (**PgDn**) command. When the purge finishes, the Sales Order Processing menu appears.

Remote Access 6

Copy Data Files to Web Server 6-3
Copy OSAS Programs to Web Server 6-7

Remote Access

When you set up OSAS Web, you can elect to allow access to your OSAS data files directly from the Internet, or to allow access to copies of your files stored on the web server. The process of using copies of your files is known as *remote processing*. See chapter 2 for more information about remote processing.

You use the functions on the Remote Access menu to set up the programs and to refresh your data files if you use remote processing.

Use the Copy OSAS Programs to Web Server function to set up remote processing.

Use the Copy Data Files to Web Server function regularly to refresh the data stored on your web server. In addition, you should run this function every time you use the Build Sales Orders from Remote Files function on the Sales Order Processing menu.

Copy Data Files to Web Server

Features

Use the Copy Data Files to Web Server function on the Remote Access menu to refresh the data that is stored on the web server if you have chosen remote processing. This program copies the OSAS data files to the web server for the inquiry and sales order entry functions.

This function copies the inventory, customer, and sales order files for use by OSAS Web functions. You can optionally copy the AR Detail History and Open Invoice files at your discretion.

Note

You need run this function only if you are using remote processing. If you are not using remote processing, your live OSAS data files are used for OSAS Web functions.

You must copy the optional files to the web server at least once if you want your customers to be able to view history.

Reports

No report is associated with this function.

Screen Use

Screen	Description
Copy Data Files to Web Server	Use this screen to specify the location where the data files are stored on the web server.

Copy Data Files to Web Server Screen

OSAS 1000
Settings Edit Print
Copy Data Files to Web Server
Web Server Data Path
d:/httpd/data/
Copy Optional Data Files? YES
WARNING: Any existing data in the Web Server Data Path will be overwritten.
Verification
Press <PgDn> to proceed

Field Definitions

Field Name	Description
Web Server Data Path	Enter the full path from the OSAS system to the data path on the web server.

Field Name	Description
Copy Optional Data Files?	The AR Detail History and Open Invoice files can be large and may take more time to copy. You can choose to skip copying these files to speed up the copy process. To copy the optional files, enter **YES**. To skip the optional files, enter **NO**.

Command Bar Definitions

This screen has no command bar.

Saving and Exiting

To begin the copy process, use the **Proceed** (**PgDn**) command. When the copy process is finished, the Remote Access menu appears.

Copy OSAS Programs to Web Server

Features

Use the Copy OSAS Programs to Web Server function on the Remote Access menu to set up the web server for remote processing. This program copies the OSAS program files to the web server for the inquiry and sales order entry functions.

You need run this function only during the installation process. Once the programs have been copied, you do not need to copy them again, unless you change your web server or update the OSAS Web software.

Reports

No report is associated with this function.

Screen Use

Screen	Description
Copy OSAS Programs to Web Server	Use this screen to specify the path where the programs reside on the web server.

Copy OSAS Programs to Web Server Screen

Field Definitions

Field Name	Description
Web Server Resource Manager Path	Enter the full path from your OSAS system to the Resource Manager path on the web server.

Command Bar Definitions

This screen has no command bar.

Saving and Exiting

To begin the copy process, use the **Proceed** (**PgDn**) command. When the copy process finishes, the Remote Access menu appears.

Master File Lists 7

Item Group Codes List	7-3
Inventory Item Pictures List	7-7
Internet Companies List	7-11
Internet Inventory Item Groups List	7-15
Internet Access Codes List	7-19
Customer Groups List	7-23
Tables List	7-27

Item Group Codes List

Features

The Item Group Codes List shows the item group codes that are on your system for the range of group codes you select.

Reports

A sample Item Group Codes List is on page 7-6.

Screen Use

Screen	Description
Item Group Codes List	Use the Item Group Codes List screen to select the group codes you want to list and the order of the information in the list.

Item Group Codes List Screen

Field Definitions

	Field Name	Description
Inquiry	Group Code	Enter the range of item group codes you want in the list.

Command Bar Definitions

Command	Description
Printer	Select **P** to send the list to a printer.
File	Select **F** to send the list to a file.
Screen	Select **S** to send the list to the screen.
End	Select **E** to change your selections or exit to the Master File Lists menu.

Saving and Exiting

After the list is produced, the Master File Lists menu appears.

Item Group Codes List

```
02/00/1999                    Builders' Supply                    Page   1
5:45 PM                       Item Group Codes List

Group ID   Group Description
---------- ----------------------------------------

APPLIANCE  Appliances
DISHWASHER Dishwashers
HEAT/AIR   Heating and Air Conditioning Equipment
INTERIOR   Interior Materials, Paint, Wallpaper, Supplies
MATERIALS  Materials
MILLWORK   Millwork Trim and Doors
PARTS      Cabinet Replacement Parts
REFRIG     Refrigerators
STOVE      Stoves and Ranges
WINDOWS    Windows

End of report
```

Inventory Item Pictures List

Features

The Inventory Item Pictures List shows the image files that you have associated with your inventory items for display on the web. You can select the range of items you want to include in the list.

Reports

A sample Inventory Item Pictures List is on page 7-10.

Screen Use

Screen	Description
Inventory Item Pictures List	Use this screen to select the items you want to list.

Inventory Item Pictures List Screen

Field Definitions

	Field Name	Description
Inquiry	Item ID	Enter the range of items you want in the list.

Command Bar Definitions

Command	Description
Printer	Select **P** to send the list to a printer.
File	Select **F** to send the list to a file.
Screen	Select **S** to send the list to the screen.

Command	Description
End	Select **E** to change your selections or exit to the Master File Lists menu.

Saving and Exiting

After the list is produced, the Master File Lists menu appears.

Inventory Item Pictures List

02/10/1999 Builders' Supply Page 1
3:16 PM Inventory Item Pictures List

Item ID	Item Description	Image File
100	Electrical Package	elec.gif
150	Plumbing Package	plumb.gif
200	Heating/Cooling Package	heatcool.jpg
200100	Furnace	furnace.jpg
200200	Water Heater	waterhtr.jpp
200300	Air Conditioner	aircond.jpg
200400	Water Softener	watersft.jpp
200500	Sump Pump	sumppump.jpg
200600	Humidifier	humid.jpg
250	Exterior Panels	panels.bmp
300	Interior Door	door1.bmp
350	Entry Door	door2.bmp
400	Interior Materials	interior.gif
450	Slide by Window 24″ x 40″	window1.bmp
460	Slide by Window 30″ X 40″	window2.bmp
550	Millwork Package	millwork.gif
600	Standard Window 24″ X 40″	window3.bmp
610	Standard Window 30″ X 40″	window4.bmp
650	Steel Supports	support.bmp
700	Cabinets	cabinet.bmp

End of report

Internet Companies List

Features

The Internet Companies List shows the companies that you have set up for internet access for the companies you select.

Reports

A sample Internet Companies List is on page 7-14.

Screen Use

Screen	Description
Internet Companies List	Use this screen to select the companies you want to list.

Internet Companies List Screen

Field Definitions

	Field Name	Description
Inquiry	Company ID	Enter the range of companies you want in the list.

Command Bar Definitions

Command	Description
Printer	Select **P** to send the list to a printer.
File	Select **F** to send the list to a file.
Screen	Select **S** to send the list to the screen.
End	Select **E** to change your selections or exit to the Master File Lists menu.

Saving and Exiting

After the list is produced, the Master File Lists menu appears.

Internet Companies List

```
02/10/1999                  Builders' Supply                  Page   1
3:33 PM                  Internet Companies List

Comp ID Company Name                 Loc ID  Batch
-------------------------------------------------------------------

H       Builders' Supply             MN0001  000001

End of report
```

Internet Inventory Item Groups List

Features

The Internet Inventory Item Groups List shows the item groups and the items that belong to them. The list can be printed for the items, locations, or group IDs you select, and can be sorted by item ID or by group code.

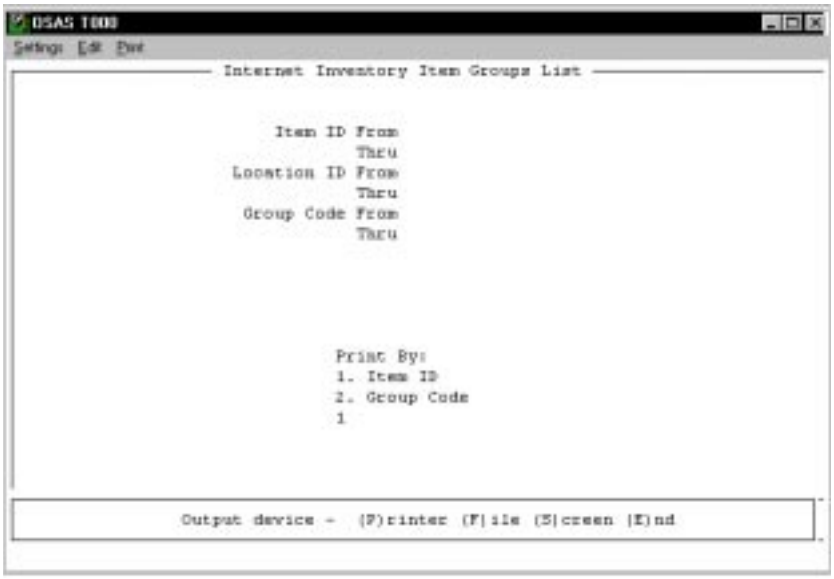
Reports

A sample Internet Inventory Item Groups List is on page 7-18.

Screen Use

Screen	Description
Internet Inventory Item Groups List	Use this screen to select the items, groups and locations you want to list, and the order of the information on the list.

Internet Inventory Item Groups List Screen



Field Definitions

	Field Name	Description
Inquiry	Item ID	Enter the range of items you want in the list.
Inquiry	Location ID	Enter the range of locations you want in the list.
Inquiry	Group Code	Enter the range of groups you want in the list.

Field Name	Description
Print By	To organize the list by item ID, enter **1**. To organize it by group code, enter **2**.

Command Bar Definitions

Command	Description
Printer	Select **P** to send the list to a printer.
File	Select **F** to send the list to a file.
Screen	Select **S** to send the list to the screen.
End	Select **E** to change your selections or exit to the Master File Lists menu.

Saving and Exiting

After the list is produced, the Master File Lists menu appears.

Internet Inventory Item Groups List

02/10/1999 Builders' Supply Page 1
5:03 PM Internet Inventory Item Groups List

Group Code	Item ID	Item Description	Loc ID	Image
HEAT/AIR	200	Heating/Cooling Package	CA0001	heatcool.jpg
HEAT/AIR	200	Heating/Cooling Package	MD0001	heatcool.jpg
HEAT/AIR	200	Heating/Cooling Package	MN0001	heatcool.jpg
HEAT/AIR	200	Heating/Cooling Package	TX0001	heatcool.jpg
HEAT/AIR	200100	Furnace	CA0001	furnace.jpg
HEAT/AIR	200100	Furnace	MD0001	furnace.jpg
HEAT/AIR	200100	Furnace	MN0001	furnace.jpg
HEAT/AIR	200100	Furnace	TX0001	furnace.jpg
HEAT/AIR	200200	Water Heater	CA0001	waterhtr.jpp
HEAT/AIR	200200	Water Heater	MD0001	waterhtr.jpp
HEAT/AIR	200200	Water Heater	MN0001	waterhtr.jpp
HEAT/AIR	200200	Water Heater	TX0001	waterhtr.jpp
HEAT/AIR	200300	Air Conditioner	CA0001	aircond.jpg
HEAT/AIR	200300	Air Conditioner	MD0001	aircond.jpg
HEAT/AIR	200300	Air Conditioner	MN0001	aircond.jpg
HEAT/AIR	200300	Air Conditioner	TX0001	aircond.jpg
HEAT/AIR	200400	Water Softener	CA0001	watersft.jpp
HEAT/AIR	200400	Water Softener	MD0001	watersft.jpp
HEAT/AIR	200400	Water Softener	MN0001	watersft.jpp
HEAT/AIR	200400	Water Softener	TX0001	watersft.jpp
HEAT/AIR	200500	Sump Pump	CA0001	sumppump.jpg
HEAT/AIR	200500	Sump Pump	MD0001	sumppump.jpg
HEAT/AIR	200500	Sump Pump	MN0001	sumppump.jpg
HEAT/AIR	200500	Sump Pump	TX0001	sumppump.jpg
HEAT/AIR	200600	Humidifier	CA0001	humid.jpg
HEAT/AIR	200600	Humidifier	MD0001	humid.jpg
HEAT/AIR	200600	Humidifier	MN0001	humid.jpg
HEAT/AIR	200600	Humidifier	TX0001	humid.jpg
INTERIOR	400	Interior Materials	CA0001	interior.gif
INTERIOR	400	Interior Materials	MD0001	interior.gif
INTERIOR	400	Interior Materials	MN0001	interior.gif
INTERIOR	400	Interior Materials	TX0001	interior.gif
INTERIOR	800001	Wallpaper - Contemporary	CA0001	
INTERIOR	800001	Wallpaper - Contemporary	MD0001	
INTERIOR	800001	Wallpaper - Contemporary	MN0001	
INTERIOR	800001	Wallpaper - Contemporary	TX0001	
INTERIOR	800002	Wallpaper - Traditional	CA0001	
INTERIOR	800002	Wallpaper - Traditional	MD0001	
INTERIOR	800002	Wallpaper - Traditional	MN0001	
INTERIOR	800002	Wallpaper - Traditional	TX0001	
INTERIOR	810001	Paint - White - Enamel	CA0001	
INTERIOR	810001	Paint - White - Enamel	MD0001	
INTERIOR	810001	Paint - White - Enamel	MN0001	

Internet Access Codes List

Features

The Internet Access Codes List shows the access codes that you have set up for your customers for the companies, customers, or access codes you select.

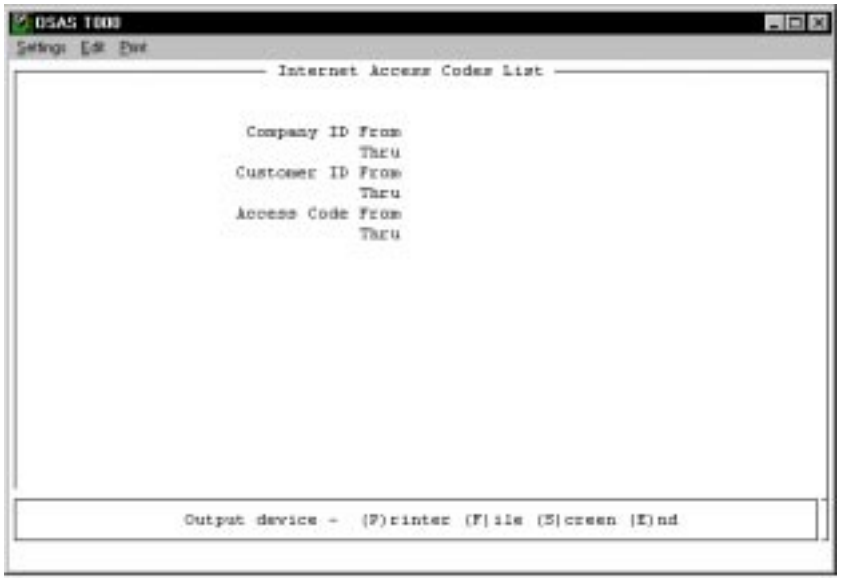
Reports

A sample Internet Access Codes List is on page 7-22.

Screen Use

Screen	Description
Internet Access Codes List	Use this screen to select the companies, customers and access codes you want to list.

Internet Access Codes List Screen



Field Definitions

	Field Name	Description
Inquiry	Company ID	Enter the range of companies you want in the list.
Inquiry	Customer ID	Enter the range of customers you want in the list.
Inquiry	Access Code	Enter the range of access codes you want in the list.

Command Bar Definitions

Command	Description
Printer	Select **P** to send the list to a printer.
File	Select **F** to send the list to a file.

Command	Description
Screen	Select **S** to send the list to the screen.
End	Select **E** to change your selections or exit to the Master File Lists menu.

Saving and Exiting

After the list is produced, the Master File Lists menu appears.

Internet Access Codes List

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5:31 PM Internet Access Codes List

Company ID	Cust ID Access Code	HTML Page Type	Access
H	ACE001 Test1	Customer General Information	YES
		Customer Order Information	YES
		Customer Order Detail Information	YES
		Customer Detail History Information	YES
		Item Information	YES
		Allow Quantities on Item Information	YES
		Allow Price/Quantity Breakdown Display	YES
		Show Balances on Customer Information	YES
		Show Credit Information on Customer Information	YES
		Allow Sales Order Entry	YES
		Display More Inventory Information	YES
H	DAL001 Cowboys	Customer General Information	YES
		Customer Order Information	YES
		Customer Order Detail Information	YES
		Customer Detail History Information	YES
		Item Information	NO
		Allow Quantities on Item Information	NO
		Allow Price/Quantity Breakdown Display	YES
		Show Balances on Customer Information	YES
		Show Credit Information on Customer Information	NO
		Allow Sales Order Entry	NO
		Display More Inventory Information	NO

End of report

Customer Groups List

Features

The Customer Groups List shows the item groups that you have set up for each customer for the customer IDs or group codes you select. You can also choose to organize the list by customer or by group code.

Reports

A sample Customer Groups List is on page 7-26.

Screen Use

Screen	Description
Customer Groups List	Use this screen to select the customers and group codes you want to list.

Customer Groups List Screen

Field Definitions

	Field Name	Description
Inquiry	Customer ID	Enter the range of customers you want in the list.
Inquiry	Group Code	Enter the range of groups you want in the list.
	Print By:	To organize the list by customer ID, enter **1**. To organize it by group code, enter **2**.

Command Bar Definitions

Command	Description
Printer	Select **P** to send the list to a printer.

Command	Description
File	Select **F** to send the list to a file.
Screen	Select **S** to send the list to the screen.
End	Select **E** to change your selections or exit to the Master File Lists menu.

Saving and Exiting

After the list is produced, the Master File Lists menu appears.

Customer Groups List

02/10/1999 Builders' Supply Page 1
5:40 PM Customer Groups List

Cust ID	Group ID	Group Description
ACE001	APPLIANCE	Appliances
ACE001	HEAT/AIR	Heating and Air Conditioning Equipment
ACE001	INTERIOR	Interior Materials, Paint, Wallpaper, Supplies
ACE001	MATERIALS	Materials
ACE001	MILLWORK	Millowrk Trim and Doors
ACE001	WINDOWS	Windows
DAL001	HEAT/AIR	Heating and Air Conditioning Equipment
GRE001	HEAT/AIR	Heating and Air Conditioning Equipment
KAN001	HEAT/AIR	Heating and Air Conditioning Equipment
LOS001	HEAT/AIR	Heating and Air Conditioning Equipment
SUN001	HEAT/AIR	Heating and Air Conditioning Equipment
TEN001	HEAT/AIR	Heating and Air Conditioning Equipment

End of report

Tables List

Features

The Tables List shows the tables that are on your system for the range of IDs you select.

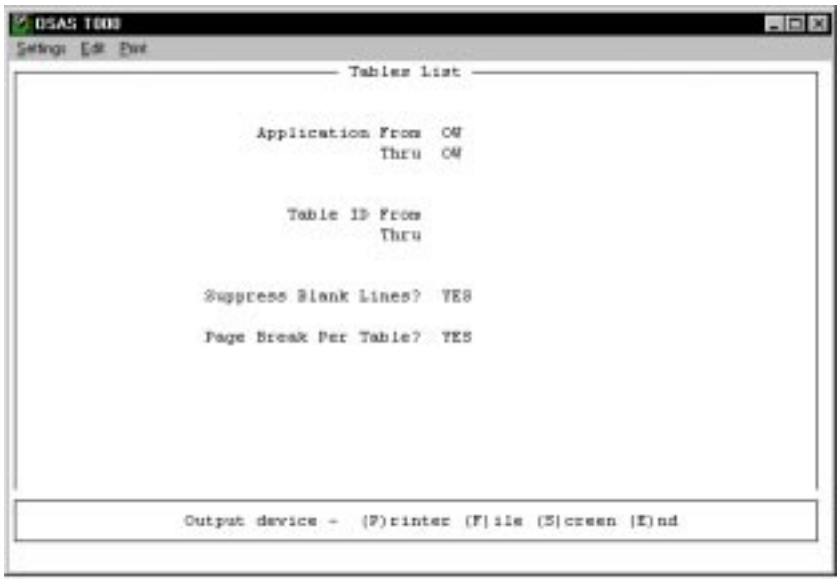
Reports

A sample Tables List is on page 7-30.

Screen Use

Screen	Description
Tables List	Use this screen to select the tables you want to list, and to select the options for the list.

Tables List Screen



Field Definitions

Inquiry

Field Name	Description
Application	The current application ID, **OW**, is displayed.
Table ID	Enter the range of table IDs you want in the list.
Suppress Blank Lines?	If you want to exclude lines with no text from the list to save space, enter **YES**; if not, enter **NO**.
Page Break Per Table?	If you want each table to print on its own page, enter **YES**; if not, enter **NO**.

Command Bar Definitions

Command	Description
Printer	Select **P** to send the list to a printer.
File	Select **F** to send the list to a file.
Screen	Select **S** to send the list to the screen.
End	Select **E** to change your selections or exit to the Master File Lists menu.

Saving and Exiting

After the list is produced, the Master File Lists menu appears.

Tables List

```
02/10/1999                    Builders' Supply                    Page   1
5:41 PM                         Tables List
                                 OSAS Web

  Table ID EMAIL     Description E-Mail Address in case of problems.
  No. of Columns   1 Column Length   50   Type  A

  Email Address
  ----------------------------------------
  Webmaster@builders_supply.com


  End of Report
```

The Web Interface 8

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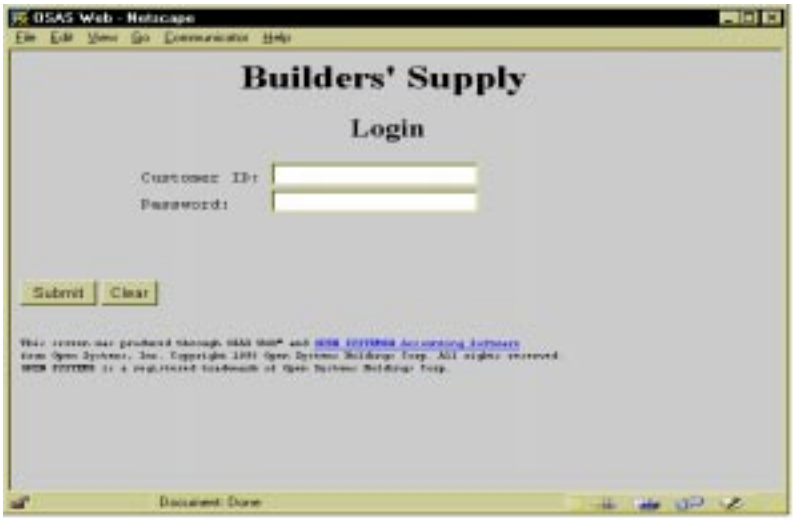
OSAS Web Login Page

Features

The OSAS Web Login Page is the first of the web pages presented to Internet users. Your customers will use this page to enter their customer ID and password, and to choose which company they want to work with.

The login page is created by the Create Login Page function on the Set Up Web Components menu in OSAS. See chapter 4 for more information about this function.

OSAS Web Login Page HTML Screen



Field Definitions

Field Name	Description
Customer ID	Enter your customer ID.
Password	Enter your password.
Company	Use the list box to select the company you want to work with.

Command Definitions

Command	Description
Submit	Click on the **Submit** button to proceed to the OSAS Web menu.
Clear	Click on the **Clear** button to clear your entries and start over.

Saving and Exiting

When you click on the Query button, OSAS Web checks the customer ID and password and builds the main menu for the customer based on the functions you have granted them access to. Then the OSAS Web Menu appears.

If the customer ID is not set up or the password is incorrect, an error message screen appears instead.

OSAS Web Main Menu

Features

The OSAS Web Menu displays the web functions available to this customer and password. Your customers will use this web page to select the information they want to view, or to select the sales order entry function to place an order.

You set up access to the functions for a customer using the Customer Access Codes function on the File Maintenance menu in OSAS.

OSAS Web Main Menu HTML Screen

Field Definitions

Field Name	Description
Choose Menu:	Use the list box to select the function you want to use from the list that appears. The functions available vary according to the customer and password you entered on the OSAS Web Login Page.

Command Definitions

Command	Description
Query	Click on the **Query** button to proceed to the function you've selected.
Clear	Use the **Clear** button to reset the menu selection and start over on this page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

Saving and Exiting

When you click on the **Query** button, OSAS Web builds the web page with the information you requested and displays the page.

Customer Lookup

Features

The Customer Lookup web page displays the Customer's account information. The information includes general information, and can optionally include aging balances and credit information.

You can specify the information available on this page using the Customer Internet Access Codes function on the File Maintenance menu in OSAS.

Customer Lookup HTML Screen

OSAS Customer Lookup - Netscape
File Edit View Go Communicator Help
Results of Customer Lookup
Customer ID ACE001
Customer Name ACE BUILDERS
Customer Phone Number (505)555-1646
Credit Limit 315000.00
Terms Code: 2PCT Discount 2%/10 Days, Net Due 30 Days
Period to Date Quarter to Date Year to Date
Sales 26650.89 216761.42 1665331.24
Number of Invoices 2 4 14
Last Sale Number 12670074
Last Sale Date 12/21/1995
New Finance Charge .00
Unpaid Finance Charge .00
Current Due 62118.88
Balance 31-60 .00
Balance 61-90 74619.56
Balance 91-120 .00
121+ .00
Unapplied Credit .00
Total Due 136738.44
Return to Main Menu Return to Login page
Problems or Questions
Email :
Document Done

Field Definitions

There are no fields to enter on this web page.

Command Definitions

Command	Description
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login page	Click on **Return to Login page** to return to the login page.

Saving and Exiting

When you finish reviewing the information, click on **Return to Main Menu** and select another function.

Customer Order Lookup

Features

The Customer Order Lookup web pages display the orders on file from a customer. The information includes the shipping status of the order, and, optionally, the line item detail for individual orders.

Customer Order Lookup HTML Screen

OSAS Customer Order Lookup - Netscape
File Edit View Go Communicator Help
Results of Order Lookup
Customer ID ACE001
Customer Name ACE BUILDERS
Customer Phone Number (505)555-1646
Open Orders:
Order Number | Requested Ship Date | PO Number | PO Date | Type | Invoice Number | Amount
00000130 | 02/15/1995 | 23634 | 02/12/1995 | Unshipped | | 8029.84
00000132 | | | | Unshipped | | 1585.50
00000133 | 02/12/1995 | | | Shipped | 00005403 | 2114.00
00000135 | | | | Unshipped | | 1057.00
00000136 | | | | Unshipped | | 1905.80
00000137 | | 136123 | 02/12/1995 | Shipped | 00005404 | 2114.00
00000138 | | 936 | 02/12/1995 | Shipped | 00005405 | 528.50
00000139 | | | | Unshipped | | 952.90
00000149 | | | | Unshipped | | 1680.63
00000151 | | | | Unshipped | | 2858.70
View Next Page
Return to Main Menu Return to Login Page
Problems or Questions
E-mail :
Document: Done

Field Definitions

If you have permission to view the line items for an order, you can click on the order number to display the line items.

Command Definitions

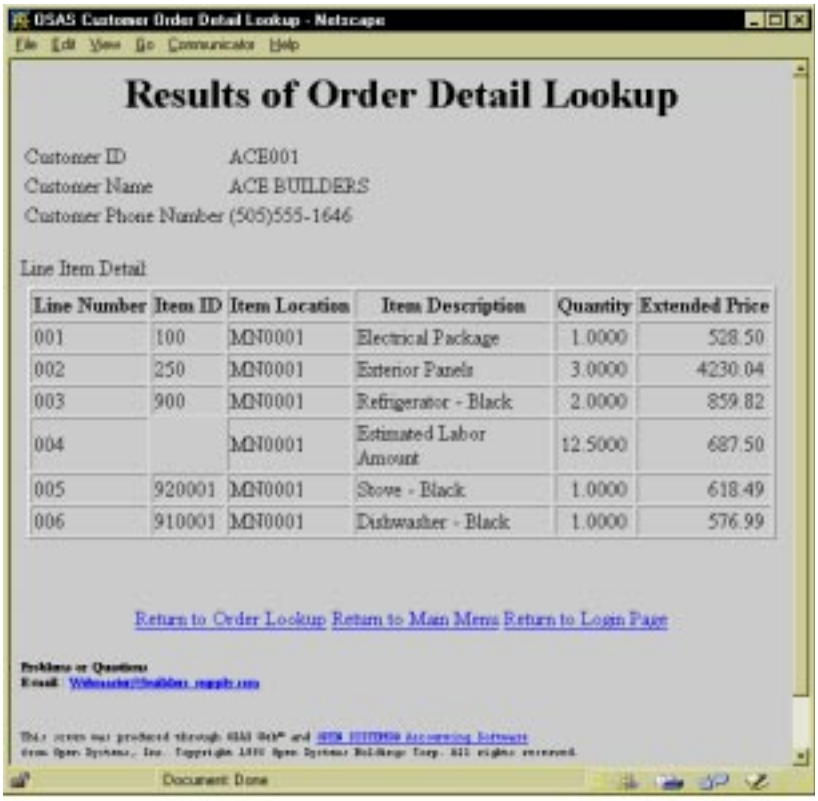
Command	Description
View Next Page	This page shows ten orders for this customer. If there are more orders after the ones displayed, the View Next Page command appears. Click on **View Next Page** to see the next page of orders.
View Previous Page	This page shows ten orders for this customer. If there are more orders before the ones displayed, the View Previous Page command appears. Click on **View Previous Page** to see the previous page of orders.
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

Saving and Exiting

When you click on an order number, the Order Detail Lookup page appears.

When you finish reviewing orders, click on **Return to Main Menu** and select another function.

Customer Order Detail Lookup HTML Screen


OSAS Customer Order Detail Lookup - Netscape
File Edit View Go Communicator Help
Results of Order Detail Lookup
Customer ID ACE001
Customer Name ACE BUILDERS
Customer Phone Number (505)555-1646
Line Item Detail
Line Number | Item ID | Item Location | Item Description | Quantity | Extended Price
001 | 100 | MN0001 | Electrical Package | 1.0000 | 528.50
002 | 250 | MN0001 | Exterior Panels | 3.0000 | 4230.04
003 | 900 | MN0001 | Refrigerator - Black | 2.0000 | 859.82
004 | | MN0001 | Estimated Labor Amount | 12.5000 | 687.50
005 | 920001 | MN0001 | Stove - Black | 1.0000 | 618.49
006 | 910001 | MN0001 | Dishwasher - Black | 1.0000 | 576.99
Return to Order Lookup Return to Main Menu Return to Login Page
Problems or Questions
Document: Done

Field Definitions

There are no fields to enter on this web page.

Command Definitions

Command	Description
View Next Page	This page shows ten line items for this order. If there are more line items after the ones displayed, the View Next Page command appears. Click on **View Next Page** to see the next page of lines.
View Previous Page	This page shows ten line items for this order. If there are more lines before the ones displayed, the View Previous Page command appears. Click on **View Previous Page** to see the previous page of lines.
Return to Order Lookup	Click on **Return to Order Lookup** to return to the list of orders for this customer.
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

Saving and Exiting

When you finish reviewing the line items on this order, click on **Return to Order Lookup** and select another order.

Customer History Lookup

Features

The Customer History Lookup web page shows the invoice, credit memo and payment history for this customer.

Customer History Lookup HTML Screen

OSAS Customer History Lookup - Netscape
File Edit View Go Communicator Help
Results of Customer History Lookup
Customer ID ACE001
Customer Name ACE BUILDERS
Customer Phone Number (505)555-1646
Type | Invoice Number | Date | Item ID/Job ID | Description | Location ID | Quantity | Unit of Measure | Amount
Invoice | 24889030 | 12/09/1995 | | Heating/Cooling Package | MN0001 | 1.0000 | PKG | 2464.41
Payment | 24889022 | 10/27/1995 | PAYMENT RECEIVED | | | .0000 | | 492882.00
Invoice | 24889022 | 09/03/1995 | | Heating/Cooling Package | MN0001 | 100.0000 | PKG | 246441.00
Payment | 24889014 | 01/27/1995 | PAYMENT RECEIVED | | | .0000 | | 49288.20
Invoice | 24889014 | 12/17/1994 | | Heating/Cooling Package | MN0001 | 10.0000 | PKG | 24644.10
Payment | 24889003 | 08/27/1994 | PAYMENT RECEIVED | | | .0000 | | 276813.92
Invoice | 24889003 | 07/11/1994 | | Heating/Cooling Package | MN0001 | 56.0000 | PKG | 138806.96
Invoice | 12670074 | 12/21/1995 | 600 | Standard Window 24" X 40" | MN0001 | 10.0000 | EA | 1343.73
Invoice | 12670074 | 12/21/1995 | 460 | Slide by Window 30" X 48" | MN0001 | 10.0000 | EA | 1606.41
Invoice | 12670074 | 12/21/1995 | 450 | Slide by Window 24" x 48" | MN0001 | 10.0000 | EA | 1464.09
Search for Invoice
View Next Page
Return to Main Menu Return to Login Page
Document Done

Field Definitions

Field Name	Description
Search for Invoice	To find a specific invoice, enter the invoice number and click on the Search for Invoice button.

Command Definitions

Command	Description
Search for Invoice	Click the **Search for Invoice** button to display the invoice with the number you entered.
View Next Page	This page shows ten history entries for this customer. If there are more entries after the ones displayed, the View Next Page command appears. Click on **View Next Page** to see the next page of history.
View Previous Page	This page shows ten history entries for this customer. If there are more entries before the ones displayed, the View Previous Page command appears. Click on **View Previous Page** to see the previous page of history.
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

Saving and Exiting

When you finish reviewing history, click on **Return to Main Menu** and select another function.

Inventory Information Lookup

Features

The Inventory Information Lookup web page displays a list of the inventory item groups to which this customer has access. The groups provide a convenient way to organize your items for viewing.

You can change the item groups that this customer can view using the Customer Groups function on the File Maintenance menu in OSAS.

You can change the items in an item group using the Internet Inventory Item Groups function on the File Maintenance menu in OSAS.

You can also choose whether to display quantities and price breaks on this web page using the Customer Internet Access Codes function on the File Maintenance menu in OSAS.

Screen Use

Screen	Description
Inventory Group Codes	Use this screen to select the items you want to list.
Inventory Information Lookup	This screen lists the items in the group that you selected. The items are displayed in groups of 10.
Inventory Additional Description	This screen lists the additional description lines for this item and a graphic image of the item, if you set one up.
Inventory Price Break Lookup	This screen shows the price breaks for the item you selected if you have access to this information.

Item Group Codes HTML Screen

Field Definitions

Click on the description of the item group you want to view. If there are more than ten item groups on file, you can search for a specific item group by entering the group code and clicking on Search for Group.

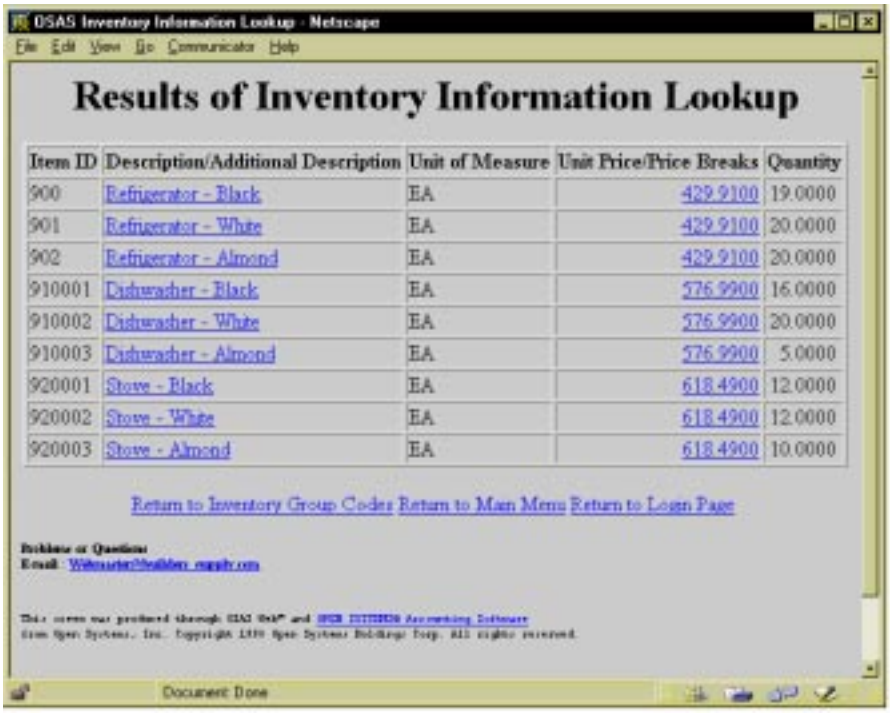
Command Definitions

Command	Description
View Next Page	This page shows ten groups for this customer. If there are more groups after the ones displayed, the View Next Page command appears. Click on **View Next Page** to see the next page of groups.
View Previous Page	This page shows ten groups for this customer. If there are more groups before the ones displayed, the View Previous Page command appears. Click on **View Previous Page** to see the previous page of groups.
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

Saving and Exiting

When you click on a description, the item information page appears.

Inventory Information Lookup HTML Screen


OSAS Inventory Information Lookup - Netscape
File Edit View Go Communicator Help
Results of Inventory Information Lookup
Item ID | Description/Additional Description | Unit of Measure | Unit Price/Price Breaks | Quantity
900 | Refrigerator - Black | EA | 429.9100 | 19.0000
901 | Refrigerator - White | EA | 429.9100 | 20.0000
902 | Refrigerator - Almond | EA | 429.9100 | 20.0000
910001 | Dishwasher - Black | EA | 576.9900 | 16.0000
910002 | Dishwasher - White | EA | 576.9900 | 20.0000
910003 | Dishwasher - Almond | EA | 576.9900 | 5.0000
920001 | Stove - Black | EA | 618.4900 | 12.0000
920002 | Stove - White | EA | 618.4900 | 12.0000
920003 | Stove - Almond | EA | 618.4900 | 10.0000
Return to Inventory Group Codes Return to Main Menu Return to Login Page
Document Done

Field Definitions

Click on the highlighted description to see additional description information and a graphical image of the item, if available. Click on the price of any item to see a breakdown of quantity-break pricing for this customer.

Command Definitions

Command	Description
View Next Page	This page shows ten items for this group. If there are more items after the ones displayed, the View Next Page command appears. Click on **View Next Page** to see the next page of items in this group.
View Previous Page	This page shows ten items for this group. If there are more items before the ones displayed, the View Previous Page command appears. Click on **View Previous Page** to see the previous page of items in this group.
Return to Inventory Group Codes	Click on **Return to Inventory Group Codes** to return to the list of group codes for this customer.
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

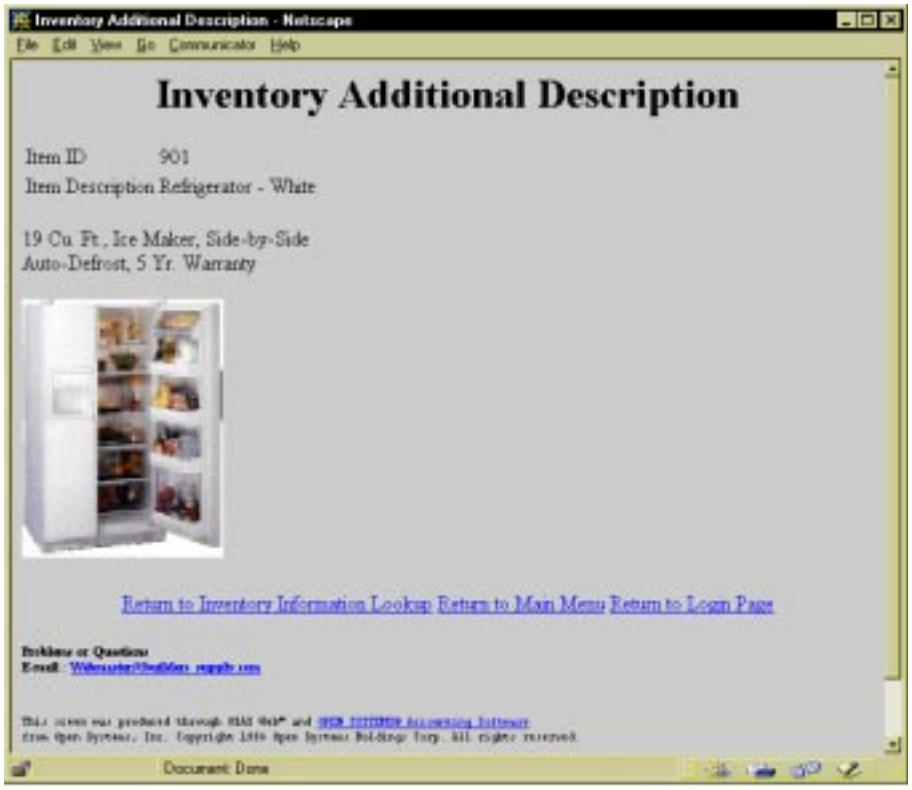
Saving and Exiting

When you click on a description, the Additional Description page appears.

When you click on a price, the item price information page appears.

When you finish looking at the items in this group, click on **Return to Item Group Codes** and choose a different group code.

Inventory Additional Description Screen


Inventory Additional Description - Netscape
File Edit View Go Communicator Help
Inventory Additional Description
Item ID 901
Item Description Refrigerator - White
19 Cu. Ft., Ice Maker, Side-by-Side
Auto-Defrost, 5 Yr. Warranty
Return to Inventory Information Lookup Return to Main Menu Return to Logon Page
Document Done

Field Definitions

There are no fields to enter on this web page.

Command Definitions

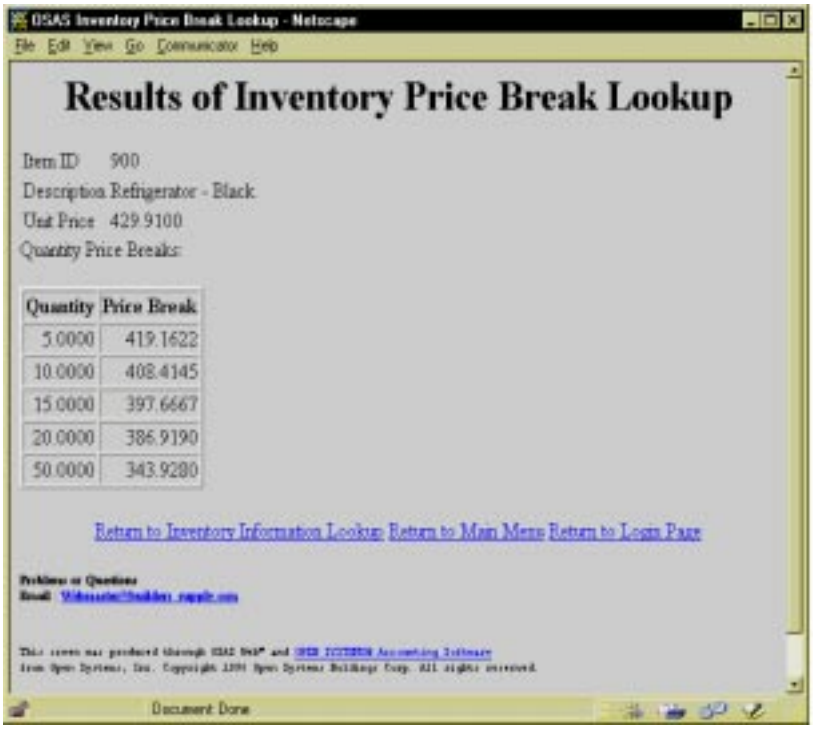
Command	Description
Return to Inventory Information Lookup	Click on **Return to Inventory Information Lookup** to return to the list of items for this group.
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

Saving and Exiting

When you finish looking at the item and description, click on **Return to Inventory Information Lookup** and choose a different item.

When you click on a highlighted description on the Inventory Information Lookup page, the Additional Information screen appears.

Inventory Price Break Lookup HTML Screen



Field Definitions

There are no fields to enter on this web page.

Command Definitions

Command	Description
Return to Inventory Information Lookup	Click on **Return to Inventory Information Lookup** to return to the list of items for this group.
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

Saving and Exiting

When you finish looking at the item pricebreaks, click on **Return to Inventory Information Lookup** and choose a different item.

Sales Order Entry

Features

The Sales Order Entry web pages allow your customer to enter a sales order through the Internet.

Your customer chooses the items he wants from the item groups you grant him access to. Next, your customer enters the quantity of the item that he wants to purchase. The OSAS Web system then calculates the price and tax for the items your customers ordered, and displays the order total.

When your customer submits the order and verifies the shipping information, OSAS Web creates the order as a quote using the batch ID you specified in the Internet Companies function on the File Maintenance menu in OSAS.

Screen Use

Screen	Description
Welcome to Order Entry	Use this screen to select the item group that contains the items you want to order.
Order Entry for Group	Use this screen to select the item you want to order from the group you selected.
Order Entry for Line Item	Use this screen to enter the quantity of the item you want, to calculate the price, and to add the item to your order.
View/Submit Current Order	Use this screen to review your order, to change the quantities on any item, and to submit your order.
Shipping Information	Use this screen to verify the shipping address for this order and to enter special notes about the order.
Order Number	This page displays the number that identifies your order.

Welcome to Order Entry HTML Screen

Sales Order Entry - Netscape
File Edit View Go Communicator Help
Welcome to Order Entry
Customer ID ACE001
Customer Name ACE BUILDERS
Customer Phone Number (505)555-1646
Choose the group that you want to order items from.
Group Code
Group Description
APPLIANCE Appliances
HEAT/AIR Heating and Air Conditioning Equipment
INTERIOR Interior Materials, Paint, Wallpaper, Supplies
MATERIALS Materials
MILLWORK Millwork Trim and Doors
WINDOWS Windows
View/Submit Current Order Return to Main Menu Return to Login Page
Problems or Questions:
Document: Done

Field Definitions

Click on the item group you want to list, or enter a group to search for and click on the **Search for Group** button.

Command Bar Definitions

Command	Description
View Next Page	This page shows ten item groups. If there are more groups after the ones displayed, the View Next Page command appears. Click on **View Next Page** to see the next page of groups.
View Previous Page	This page shows ten groups. If there are more groups before the ones displayed, the View Previous Page command appears. Click on **View Previous Page** to see the previous page of groups.
View/Submit Current Order	Click on **View/Submit Current Order** to complete the shipping information, view the order totals and approve your order.
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

Saving and Exiting

When you select a group the Order Entry for Group page appears.

Order Entry for Group HTML Screen

Sales Order Entry - Netscape
File Edit View Go Communicator Help
Order Entry for Group APPLIANCE
Customer ID ACE001
Customer Name ACE BUILDERS
Customer Phone Number (505)555-1646
Choose the item ID you want to order.
Item ID | Item Description/Additional Description | Unit of Measure | Price
900 | Refrigerator - Black | EA | 429.9100
901 | Refrigerator - White | EA | 429.9100
902 | Refrigerator - Almond | EA | 429.9100
910001 | Dishwasher - Black | EA | 576.9900
910002 | Dishwasher - White | EA | 576.9900
910003 | Dishwasher - Almond | EA | 576.9900
920001 | Stove - Black | EA | 618.4900
920002 | Stove - White | EA | 618.4900
920003 | Stove - Almond | EA | 618.4900
Choose a Different Group Code View/Submit Current Order Return to Main Menu Return to Login Page
Document: Done

Field Definitions

Click on the item you want to order.

If there are more than 10 items in the group, you can view more items or search for a specific item by entering an item ID to search for and clicking on the **Search for Item** button.

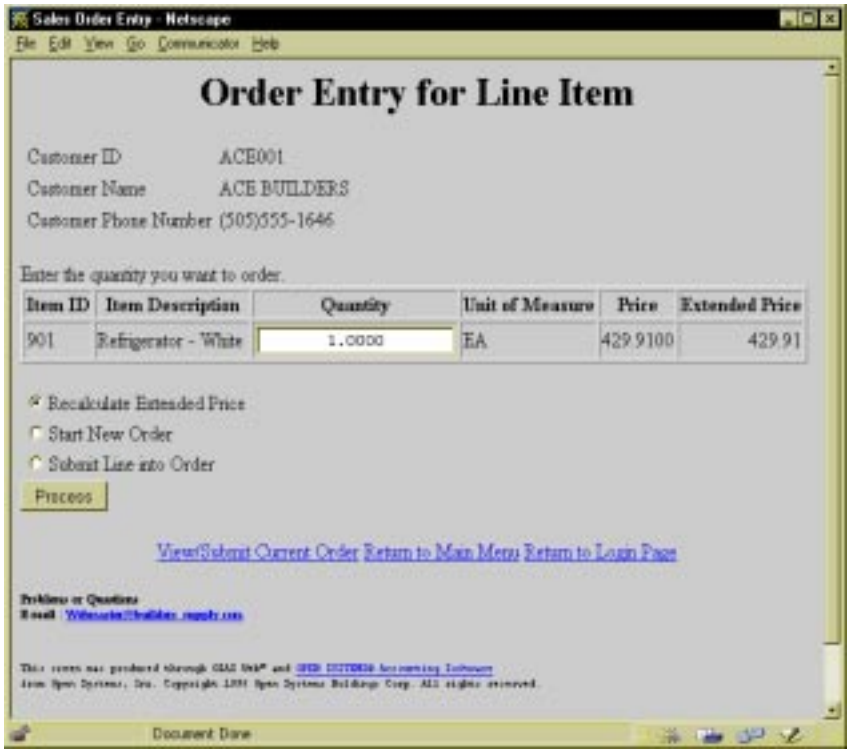
Command Bar Definitions

Command	Description
View Next Page	This page shows ten items in this group. If there are more items after the ones displayed, the View Next Page command appears. Click on **View Next Page** to see the next page of items for this group.
View Previous Page	This page shows ten items in this group. If there are more items before the ones displayed, the View Previous Page command appears. Click on **View Previous Page** to see the previous page of items for this group.
Choose a Different Group	Click on **Choose a Different Group** to return to the Welcome to Order Entry page. Then select a different group of items to list.
View/Submit Current Order	Click on **View/Submit Current Order** to complete the shipping information, view the order totals and approve your order.
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

Saving and Exiting

When you select an item the Order Entry for Line Item page appears.

Order Entry for Line Item HTML Screen



Field Definitions

Enter the quantity of the item you want to order. Enter **0** (zero) to skip ordering this item.

After you specify the quantity you want, select **Recalculate Extended Price** and click on the **Process** button. OSAS Web will calculate the price for the quantity you ordered.

When you are satisfied with the quantity and price, select **Submit Line into Order** and click the **Process** button.

Command Bar Definitions

Command	Description
View/Submit Current Order	Click on **View/Submit Current Order** to complete the shipping information, view the order totals and approve your order.
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

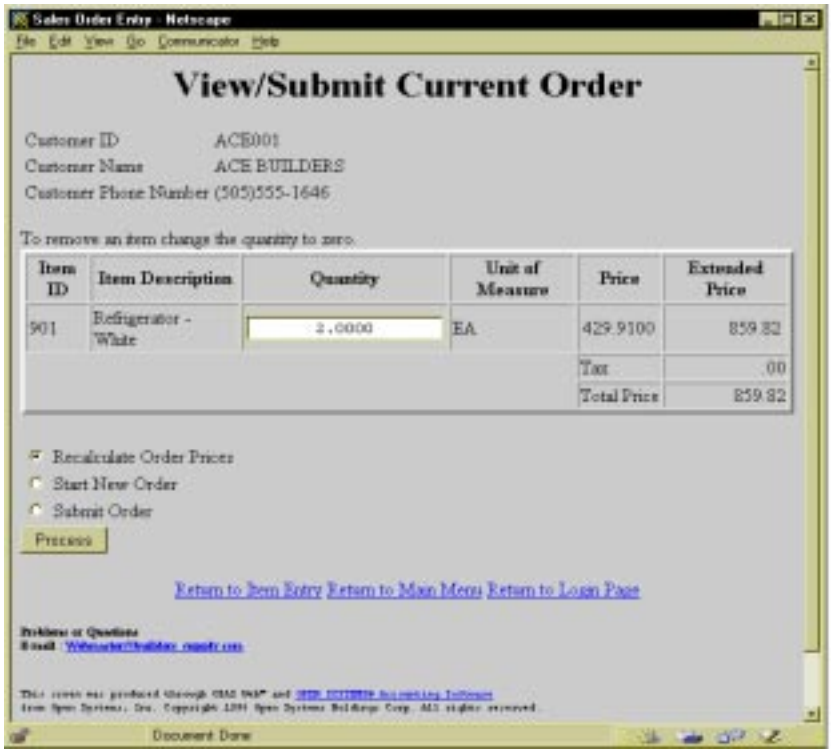
Saving and Exiting

When you select **Submit Line into Order** and click on the **Process** button, the Shipping Information page appears.

To abandon your current order and start a new one, select **Start New Order** and click the **Process** button. The Welcome to Order Entry page appears.

When you click on **View/Submit Current Order**, the View/Submit Current Order page appears.

View/Submit Current Order HTML Screen



Field Definitions

Review the items you have ordered. You can change the quantity of any line item, or cancel a line item by changing the quantity to zero.

If you change the quantity of a line item, select **Recalculate Order Prices** and click the **Process** button. OSAS Web will recalculate the order totals based on your changes.

When you are satisfied with your order, select **Submit Order** and click the **Process** button.

Command Bar Definitions

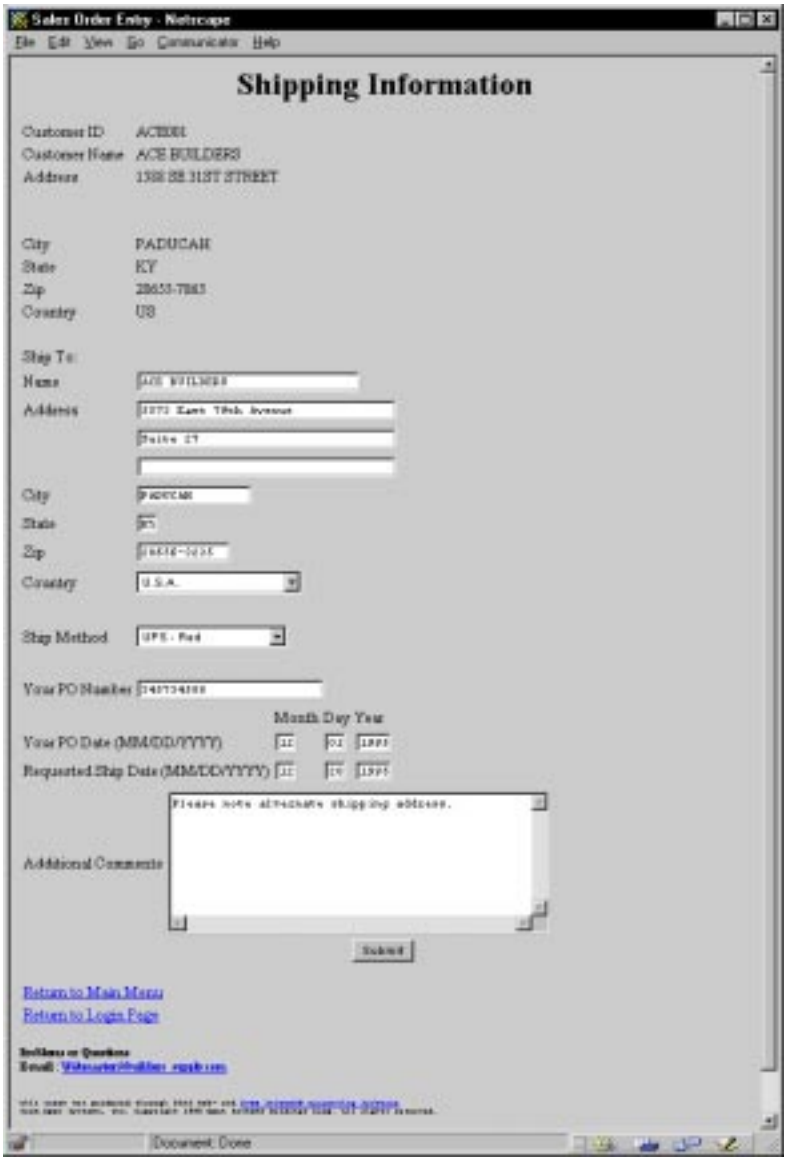
Command	Description
View Next Page	This page shows 40 items on this order. If there are more items after the ones displayed, the View Next Page command appears. Click on **View Next Page** to see the next page of items on this order.
View Previous Page	This page shows 40 items on this order. If there are more items before the ones displayed, the View Previous Page command appears. Click on **View Previous Page** to see the previous page of items on this order.
Return to Item Entry	Click on **Return to Item Entry** to add more items to your order.
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

Saving and Exiting

When you select **Submit Order** and click on the **Process** button, the Shipping Information page appears.

To abandon your current order and start a new one, select **Start New Order** and click the **Process** button. The Welcome to Order Entry page appears.

Shipping Information HTML Screen



Field Definitions

Field Name	Description
Name	Enter a company's or individual's name for the shipment.
Address	Enter 1-3 lines of address information for the shipment.
City/State/Zip/ Country	Enter the city, state, zip code and country to which the shipment will be sent.
Ship Method	Select a shipping method from the list presented.
Your P.O. Number	Enter your purchase order number, if necessary.
Your P.O. Date	Enter the date of your purchase order. Enter the month, day and year in the appropriate fields.
Requested Ship Date	Enter the date by which you want to receive the shipment. Enter the month, day and year in the appropriate fields.
Additional Comments	Enter any additional information you want to pass along about your order. You might use this field to specify alternative items, to request a rush order, to request a phone call before the order is shipped, and so on.

Command Bar Definitions

Command	Description
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

Saving and Exiting

When you are finished with the shipping information, click the **Submit** button to process your order. When your order has been submitted, the Order Number Web Page appears.

Order Number HTML Screen

Field Definitions

The number assigned to the order appears.

Note

If you use remote processing, this number may change when you run the Build Sales Orders from Remote Files function on the Sales Order Processing menu.

Command Bar Definitions

Command	Description
Start Another Order	Click on **Start Another Order** to return to the Welcome to Order Entry screen. Then select from the item groups to enter a new order.
Return to Main Menu	Click on **Return to Main Menu** to return to the OSAS Web Main Menu page.
Return to Login Page	Click on **Return to Login Page** to return to the login page.

System Messages A

Access code xxxxxxxxxxxxx for company xxx and customer xxxxxx does not exist.

The access code you are trying to copy from is not set up for the customer and company entered. Check the access code and verify it is set up correctly with the customer and company you are trying to copy from.

Company is not set up for Internet Transactions.

You cannot use Build Sales Orders from Internet function for a company listed as Inactive. Use the Internet Companies function on the File Maintenance menu to change the status to Active.

Could not find xxxxxxxxx. You may have problems running OSAS Web without this file.

A required file is missing. Without this file, some functions within OSAS Web will not work properly. Make sure the required file is in the data path and try again.

Could not find xxxxxxxx.xxx. You may have problems running OSAS Web without this program.

A required program is missing. Without this program, some functions within OSAS Web will not work properly. Make sure the required program is in the Resource Manager path and try again.

Could not find application information for Resource Manager.

The file OSAPPL is missing or corrupted. Make certain that OSAPPL is in your Resource Manager path and try the function again.

Customer xxxxxx already has internet access.

The customer is already set up within this group.

Destination directory cannot be the same as source directory.

The destination directory entered is the same as the source directory. Check for the correct destination directory and reenter it.

Internet access for xxxxxx in company xxx will be completely removed.

Use the Delete (F3) command to remove all access codes for the customer and the company or press **Enter** to abort this operation.

Internet access code xxxxxxxxxxxx will be removed.

Use the Delete (F3) to remove access code for the customer or press **Enter** to abort this operation.

Inventory must be installed to run the Print Inventory Item Groups list.

The OSAS Inventory application must be installed to use this function.

Inventory must be installed to run the Print Inventory Pictures list.

The OSAS Inventory application must be installed to use this function.

Item xxxxxxxxxxxxxxxxxx is already set up.

The Item ID you entered already has Internet access. Either enter a new item or edit the existing item entry.

Line Item error: &, ?, #, +, or ‘ ‘, these are reserved for internet use.

The code or ID you entered contains an invalid character. Reenter the code or ID without these reserved characters.

Master access code xxxxxxxxxx for company xxx does not exist.

The access code you entered is not set up for the company that you entered. Check the code and verify it is set up correctly for the company you are trying to copy from.

The filename cannot contain spaces.

The filename you entered for a graphic cannot have a space in it. Check the name of the picture file and reenter it.

Thru value must be greater than from value.

When you specify a range of items for a report, the Thru value you enter must be greater than or equal to the From value.

The code you want to use for a master password is already being used.

The Master password you entered is already set up for one of your customers. Choose another password.

Access code xxxxxxxxxx is a master password.

The password you are entering for the customer is already set up as a master password. Choose another password.

There are no internet companies set up to make a login page for.

You must run the Internet Companies function from the File Maintenance menu before you can create your login page.

The last character of your path must be a '/'.

The path entered is too long. The path name must end in a '/'.

Unable to:

open data directory for the Web Server.

locate OWORDLOG log file.

open specified directory.

find SOTHxxx on Web Server Path.

find SOTDxxx on Web Server Path.

open specified directory.

open specified path for your home page.

open osasweb directory on the Web server.

open BBx directory to the server.

open osasweb directory on the Web Server.

The system was unable to find the path you entered. Find the correct path name and enter it.

You must have Sales Order installed to use Build Sales Orders.

The OSAS Sales Order application must be installed to use this function.

You must set up the data directory on the web server.

When you used the Install Web Server Components function, you did not enter the Data File Path. You must set up this path before you can use the Build Sale Orders from Internet function.

You cannot delete a group that has items set up for it.

The group code you are trying to delete has items set up for it. Use the Internet Inventory Item Groups function on the File Maintenance menu to delete all the items from this group.

You must have Inventory installed for this company to use item groups.

The OSAS Inventory application must be installed to use this function.

You must set up internet companies before setting up internet items.

The company for which you are trying to set up items does not have internet access. Set up internet access for the company before using this function.

You must have Inventory installed for this company to use pictures.

The OSAS Inventory application must be installed to use this function.

You cannot delete a group that is currently set up under a customer.

The group code you are trying to delete has customers set up for it. Use the Customer Groups function to delete all the customers from this group.

You must run 'Install OSAS Web Components' first.

You have not run the Install Web Server Component Function from the Set Up Web Components menu. You must run this function before you can use any function on of the Sales Order Processing Menu.

You must set up the osasweb directory on the server first.

When you used the Install Web Server Components, you did not enter the Web Server Programs Path. This path needs to be set up before you can use this function.

You must set up internet companies before setting up customer groups.

The company for which you are trying to set up customer groups does not have internet access. Set up internet access for the company before using this function.

You must set up group codes before setting up customer groups.

The company you are trying to set up customer groups for does not have item group codes set up. Setup item group codes for the company before using this function.

You must have Accounts Receivable installed to set up customer groups.

The OSAS Accounts Receivable application must be installed to use this function.

You must have Sales Order installed to view the transaction journal.

The OSAS Sales Order application must be installed to use this function.

You must have Accounts Receivable installed to set up this Company

The OSAS Accounts Receivable application must be installed to use this function.

You must have Sales Order installed to use purge log file.

The OSAS Sales Order application must be installed to use this function.

You must set up the BBx directory to the server first.

When the 'Install Web Server Components' was run, the Web Server Programs Path was not entered. This path needs to be set up before you can use this function.

Common Questions B

Q: When I try to access the web, I get an error.

A: A drive in your computer is mapped but not used by OSAS Web and should be excluded in the CONFIG.BBX file. Add this line to your CONFIG.BBX file:

dsksyn E:

Specify a dsksyn line for each drive mapped but not used by OSAS Web. Read Appendix D for more help on editing your CONFIG.BBX file.

Q: Can I use BBX4 on Windows NT?

A: No. BBx Progression 4 is not recommended for use with the Windows NT operating system. Visual PRO/5 is best suited for operating on your Windows NT system.

Q: How many users can access OSAS Web at the same time?

A: The number of customers OSAS Web allows to access your data depends on two things: your web server and the BBx interpreter. While the number of users depends on the program's limitations, you can control the number of users within certain parameters.

The web server can be set to allow only a limited number of users, depending on the server's capabilities. Consult your web server's guide for more help.

Your BBx interpreter can handle a given number of users, depending on your activation key. If more than that number of users try to access functions in OSAS Web at the same time, the users that logged on last will receive an error.

Note

An interpreter session is only open for as long as it takes to load the HTML page. When the page is finished loading, the session closes, allowing another user to have access.

Q: I set up item pictures and they don't show up.

A: In setting up your item pictures, you must set up the virtual paths linking the data to the display function screens. Check these two items:

1.) You must set up a virtual path on the web server. The virtual path should be /image, with the actual path going to the directory where the images are stored. See your web server manual for more information.

2.) You need to copy the image files into the directory on the web server that the virtual path is mapped to.

Q: I change my colors, but only the Login Page changes.

A: When you use Remote Processing, you must update the files on the web server, using the Copy Remote Data Files function on the Remote Processing menu. This function update the web pages with the color changes you made in OSAS Web.

Q: Can I use WIN CGI scripting calls with OSAS Web?

A: No. Currently OSAS Web only supports standard CGI scripting calls.

Q: I run OSAS Web at my Internet Solution Provider (ISP). How do I update my files?

Follow these steps:

1.) Find out what directories the ISP is using for your OSAS Web files. The directories you need to check are:

- The actual path that the /osasweb virtual directory is mapped to
- The actual path that the /image virtual directory is mapped to

- The actual path of the document directory where OPENHOME.HTM is
- If you do not keep the data files in the /osasweb virtual directory, you need the directories where the data and OSAS Programs are kept.

2.) Create a *mirror web site*. A mirror web site is a copy of your web site, including file placement, that you may create on a separate computer at your location.

Because it matches your ISP web site, you can use the mirror web site to create what your customers will see after you personalize your web site. This saves potential down time that happens when you testing various OSAS Web functions, solve problems, and make repeated web site modifications without constantly updating your ISP web site. When you update your files and functions, make your modifications to your mirror web site, check them, and then copy the updates to your ISP web site.

3.) To update your login page, use the Create Login Page function and enter the path for the document directory on the mirror web site.

4.) To update all the OSAS Web programs, use the Install OSAS Web Components function, and set the paths to use the directories on the mirror web site.

5.) To update the remote data files and remote programs, use the Copy Data Files to Data Server and Copy OSAS Programs to Web Server functions. After completing these functions, set the ISP path to match the mirror web site.

6.) To update the image files, copy them into the image directory on the mirror web site.

7.) When you finish updating your files on the mirror website, you can use FTP (file transfer protocol) software to move all the files in each directory to the matching ISP directory.

Q: I'm using .BMP file formats for my pictures and they don't display correctly.

A: Many Internet browsers do not support the viewing of bitmap (.BMP) images. You should try using .JPG or .GIF file formats instead. Files saved using these formats are better quality, showing much more detail and, in addition to working better on browers, are able to load faster than a bitmap file.

List of Files Copied C

When you install the web server components, the following files are copied from the OSAS progOW path to the destination you entered. Some files are stored with different extensions to avoid duplication. These files are renamed to the correct extension when they are copied.

BBX Programs

These programs use input from Internet users to look up data and create web pages:

OWPASSWD.BBX	Verifies Passwords
OWMENU.BBX	Creates the Main Menu
OWLOOKUP.BBX	Calls a BBX program based on your choice from the main menu
OWCUST.BBX	Customer General Information
OWORDR.BBX	Customer Order Information
OWORD2.BBX	Customer Order Detail Information
OWHIST.BBX	Customer Detail History Information
OWINVL.BBX	Item Information – Group Code Breakdown
OWITEMS.BBX	Item Information – Items for the group code you picked
OWPRCALC.BBX	Item Price Calculator
OWPBRK.BBX	Item Price/Break Information
OWADDL.BBX	Additional Description/Picture
OWORDER.BBX	Order Entry – Group Code Screen

OWPASSWD.BBX	Verifies Passwords
OWORDER2.BBX	Order Entry – Items for the Group Code you picked
OWORDER3.BBX	Order Entry – Line Item Entry
OWORDER4.BBX	Order Entry – Recalculate Prices and Submit Line into an order
OWORDER5.BBX	Order Entry – View/Submit Order
OWORDER6.BBX	Order Entry – Recalculate Prices and/or Show Shipping Information for submitting an order
OWORDER7.BBX	Order Entry – Move an order into Sales Order
OWPATH.BBX	Get the path of the bbx directory on the Web server
OWSESS.PUB	Verify the SESSION ID
OWFILE.PUB	Set the template for the SESSION string
OWPURGE.PUB	Remove all entries from the SESSION file that are more than 24 hours old
OWPC.BBX	Get period information from RMTB

HTML Base Pages

These files contain the framework for the HTML pages displayed to Internet users. The data requested by the users is merged into the framework by the programs listed above.

OWPASSWD.TXT	Template text file for OWPASSWD.BBX
OWMENU.TXT	Template text file for OWMENU.BBX
OWCUST.TXT	Used by OWLOOKUP
OWORDR.TXT	Used by OWLOOKUP
OWORD2.TXT	Template text file for OWORD2.BBX
OWHIST.TXT	Used by OWLOOKUP

OWINVL.TXT	Used by OWLOOKUP
OWPBRK.TXT	Template text file for OWPBRK.BBX
OWSESS.TXT	Invalid Session message
OWORDASK.TXT	Continue/New Order message
OWORDER.TXT	Template text file for OWORDER.BBX
OWORDER2.TXT	Template text file for OWORDER2.BBX
OWORDER3.TXT	Template text file for OWORDER3.BBX
OWORDER5.TXT	Template text file for OWORDER5.BBX
OWORDER6.TXT	Template text file for OWORDER6.BBX
OWORDER7.TXT	Template text file for OWORDER7.BBX
OWBADQTY.TXT	Invalid Quantity message
OWADDL.TXT	Template text file for OWPASSWD.BBX
OWITEMS.TXT	Used by OWLOOKUP
OWBUSY.TXT	Process Interrupted message
OWNOVIEW.TXT	No Items to View message

Standard CGI Executables

These programs accept user input, start the BBx interpreter, and run the necessary OSAS Web program. When the BBx program is finished, these programs load the resulting web pages:

OWMENU.EXE	OWORDER2.EXE
OWLOOKUP.EXE	OWORDER3.EXE
OWORD2.EXE	OWORDER4.EXE
OWPBRK.EXE	OWORDER5.EXE

OWADDL.EXE OWORDER6.EXE

OWORDER.EXE OWORDER7.EXE

Files Copied and Function in OSAS Web

When you copy files from OSAS Web, files are automatically created, renamed, and copied to in their destination drive. The tables below shows the original file name, the temporary file that is created and the final file name.

For a UNIX/Linux-based system, the files are:

Original File	Temporary File	Destination File
owmenu.tm2	Builds owmenu.sh	owmenu.exe
owlookup.tm2	Builds owlookup.sh	owlookup.exe
oword2.tm2	Builds oword2.sh	oword2.exe
owpbrk.tm2	Builds owpbrk.sh	owpbrk.exe
owaddl.tm2	Builds owaddl.sh	owaddl.ex
oworder.tm2	Builds oworder.sh	oworder.exe
oworder2.tm2	Builds oworder2.sh	oworder2.exe
oworder3.tm2	Builds oworder3.sh	oworder3.exe
oworder4.tm2	Builds oworder4.sh	oworder4.exe
oworder5.tm2	Builds oworder5.sh	oworder5.exe
oworder6.tm2	Builds oworder6.sh	oworder6.exe
oworder7.tm2	Builds oworder7.sh	oworder7.exe

For a Windows system, a temporary file is not created. The original file is copied and renamed to the destination file.

Original File	Destination File
OWMENU.TMP	OWMENU.BAT
OWLOOKUP.TMP	OWLOOKUP.BAT
OWORD2.TMP	OWORD2.BAT
OWPBRK.TMP	OWPBRK.BAT
OWADDL.TMP	OWADDL.BAT
OWORDER.TMP	OWORDER.BAT
OWORDER2.TMP	OWORDER2.BAT
OWORDER3.TMP	OWORDER3.BAT
OWORDER4.TMP	OWORDER4.BAT
OWORDER5.TMP	OWORDER5.BAT
OWORDER6.TMP	OWORDER6.BAT
OWORDER7.TMP	OWORDER7.BAT

Config Files:

For both UNIX/Linux- and Windows-based systems, the CONFIG file is the same and is not renamed.

CONFIG.TMP	config.bbx

BB Web Components

Many BB WEb components are copied directly to the Remote Access web server. Below is a list of the files copied.:

BBWEB.DOC	GENSMPL1	GENSMPL2	GENSMPL3
BBWEB.CNF	BBWEB.SH	BBWEB2.SH	BBWEBNT.PL
DEMOBBW.BBX	DEMOCENT.BBX	DEMOCLST.BBX	DEMOCLST.TXT
DEMOCUPD.BBX	DEMOILST.BBX	DEMOILST.TXT	DEMOMENU.TXT
DOSCGI.BAT	LICENSE.TXT	README	RSREAD.WBB
RSREADM.WBB	RSTTYS.LCK	RSTTYS.TXT	RSWATCH.SH
RSWATCH.WBB	STDCGI.EXE	UTACTV.WBB	UTADDR.WBB
UTCDATE.WBB	UTCDTF.WBB	UTCGI.WBB	UTCGIACC.WBB
UTCGIWIN.WBB	UTCNUM.WBB	UTCPROP.WBB	UTCSTR.WBB
UTENCODE.WBB	UTENTITY.WBB	UTENV.WBB	UTERR.WBB
UTEXIT.WBB	UTFRMGEN.WBB	UTFRMGN2.WBB	UTFRMIN.WBB
UTFRMOUT.WBB	UTHTMFIL.WBB	UTHTMGEN.WBB	UTHTMKEY.WBB
UTHTMOUT.WBB	UTHTMSEL.WBB	UTISIP.WBB	UTMETA.WBB
UTMMOIN.WBB	UTMMOOUT.WBB	UTMORE.WBB	UTSELECT.WBB
UTSEND.WBB	UTSUB.WBB	UTTABLE.WBB	UTTAGS.WBB
UTTEMPFL.WBB	UTTPLBAS.WBB	UTTPLCP.WBB	UTWATCH.WBB
WINCGI.BAT	WINCGI.EXE		

Editing Files D

You may need to edit certain files to set up remote processing or correct errors. This appendix demonstrates how to edit your CONFIG.BBX file, DOS batch files, and UNIX shell scripts.

Modifying CONFIG.BBX

If you are using multiple drives and Remote Processing you may need to modify CONFIG.BBX to use the *dsksyn* command. If your data lies outside the current directory, you myst add the *prefix* command.

CONFIG.BBX

```
stblen=3072
fcbs=70
handles=70
cibs=70
USE_LIM
aliases=20
dsksyn a
dsksyn b
prefix /httpd/ /httpd/bbx/ e:/progrm/
```

There are two important settings to know about when you set up the CONFIG.BBX file: *prefix* and *dsksyn*.

If you have the data files in a different path than the BBX directory, you should specify this in the prefix by entering the full path name of the location where the data files reside. *Make sure that you use forward slashes and end the path with a forward slash* (‘/’). If the interpreter is on a different path than the BBX directory, you will need to add that path to the prefix also. Separate multiple prefix entries with a single space.

If a prefix refers to a different drive than the root drive, you must use the dsksyn command. Dsksyn lets BBX know it can skip looking in a particular drive. For example, if you use drives A, B, C, D, and E, and you keep your data files on drive E and server information on drive C. You must use dsksyn for drives A, B, and D, to avoid errors. When you enter multiple dsksyn settings, you must enter each dsksyn on a separate line.

Modifying Batch and Script Files

If the interpreter is on a different path than the BBX directory, you will need to change the four .BAT files on DOS; if you are using UNIX, you will need to change the four .EXE scripts.

DOS Changes:

All of the DOS batch files in OSAS Web are similar. The MENU.BAT file is shown here. You can make similar changes to the other batch files.

MENU.BAT:

```
@echo off
rem This batch file will work under O'Reilly Website's DOS CGI interface.
rem You can make copies under any name you want, and execute it via
rem http://cgi-dos/name.bat.  Each copy can be associated with a BBx
rem program.
rem set BBPROG to be your BBx program, BBEXEC, BBCONFIG, and MEM for
   rem BBx startup.
set BBPROG=osasmenu.bbx
set BBEXEC=c:\server\bbx\bbx4.exe
```

Note

This line must contain the full path to the interpreter.

```
set BBCONFIG=config.bbx
set MEM=255
set BBTERM=TINV
```

```
if “%os%”==”Windows_NT” goto NT:
rem Win 95 - Website uses OUTPUT_FILE
if “%REQUEST_METHOD%”==”POST” goto WIN95CONTENT
%BBEXEC% -m%MEM% %BBPROG% >%OUTPUT_FILE% - doscgi
goto DONE
:WIN95CONTENT
%BBEXEC% -m%MEM% %BBPROG% <%CONTENT_FILE%
  >%OUTPUT_FILE%
goto DONE
:NT
rem Win NT - Website uses stdout
IF “%REQUEST_METHOD%”==”POST” goto WINNTCONTENT
%BBEXEC% -m%MEM% %BBPROG%
goto DONE
:WINNTCONTENT
%BBEXEC% -m%MEM% %BBPROG% <%CONTENT_FILE%
:DONE
```

UNIX changes:

All of the UNIX script files in OSAS Web are similar. The MENU.EXE file is shown here. You can make similar changes to the others script files.

```
MENU.EXE
# Set PGM and MEM to desired values for the bbx program and start size.
# (these can be set in another script, that execs this one.)
PGM=OSASCUST.BBX
MEM=512
# modify these values per your bbx configuration
MAXTRIES=5
ERRORLOG=/usr/local/etc/httpd/bbx/error.log
CONFIG=/usr/local/etc/httpd/bbx/config.bbx
BBXEXEC=/usr/local/etc/httpd/bbx/bbx4
```

Note

This line must contain the full path to the interpreter.

```
MEM=${MEM:=512}
if [ “$PGM” = ““ ]
 then
 echo “Content-type: text/plain”
 echo ““
 echo “Invalid pgm argument”
 exit
fi
umask 0
RETRIES=0
until [ $RETRIES -gt $MAXTRIES ]
do
$BBXEXEC -q -c$CONFIG -m$MEM $PGM - “$@” 2>/tmp/bberr.$$
if [ -s /tmp/bberr.$$ ]
then
 RETRIES=‘expr $RETRIES + 1‘
 sleep 1
 read msg </tmp/bberr.$$
 rm /tmp/bberr.$$ 2>/dev/null
else
 RETRIES=99
 rm /tmp/bberr.$$ 2>/dev/null
fi
done
if [ ! “$RETRIES” = “99” ]
then
 echo ‘date‘ $msg >>$ERRORLOG 2>/dev/null
 echo “Content-type: text/plain”
 echo ““
 echo “The database server is too busy.  Sorry about that.”
 echo “Please try again later.”
 echo ““
 echo “By the way, we have recorded this problem, and will add”
 echo “capacity if it happens frequently.”
fi
```

Files for Remote Access E

Remote Access provides you greater security than the standard OSAS Web setup. By physically separating your company's web server from the data storage, your customers using the internet access are allowed access to only the areas of information which you specify. To do this, you must copy specific files from the main computer, where the OSAS information is stored, to the remote terminal, where the web server resides.

The information stored on the web server is separated into two groups. The first group is the data files; the second group is the public programs.

Copy Data File to Web Server:

To copy the data files needed by OPEN, use the Copy Data Files to Web Server function to copy these on the Remote Access menu files:

ARCDx	ARCTx	INUMx	INCLx
ARCUx	INGLx	INHSx	INUPx
OWCC	INLTx	INVEx	INLDx
INTBx	INCAx	INPPx	INPSx
INLPx	INQTx	INTXx	INLOx
INSNx	INQLx	INAIx	OSINFO
OSAPPL	OWTB	OWCCx	OWCP
OWICx	OSTPL	OSCOMP	OWGCx
OWIIx	OSCN	RMGCx	RMTDx
RMTHx	SOTHx	SOTB	SOTDx
SODEx			

You also have the option to copy these files:

ARINx	ARHIx

ARINx stores the customer's open invoices. ARHIx stores the customer's detailed transaction history. During the initial installation, you must copy these files which are necessary for the history lookup function and calculating balances. Later, you can skip copying these files, because they can grow quite large and, depending on your computer system, can take quite a long time to copy.

Copy Programs to Web Server:

Use the Copy Programs to Web Server function on the Remote Access menu to copy these programs:.

GENGETOP.PUB	GENOPEN.PUB	GENTAX.PUB
INUPD.PUB	INCALCPR.PUB	INUPDSET.PUB

Basic Web Utility F

Basic Web Utility CGI Toolkit

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Overview of the Basic Web Utility and CGI

The popularity of the Internet has led to the development of many software products that take advantage of the capabilities of TCP/IP networking and inexpensive graphical World Wide Web clients called "Browsers". In addition to use on the Internet, companies have found that these same software products can also be used on their own networks, providing a less expensive alternative to developing graphical applications. These internal networks are called "Intranets".

Browsers interpret and display specially formatted text, called HTML, in a graphical format. The document can include links to other documents or files, in-line graphical images, and data input forms that can be used to send information to a World Wide Web server. HTML documents consist of text and markup tags. Examples of tags include
 (line break), <p> (paragraph break), <h1> (highest level heading), and <hr> (horizontal rule). HTML information is available on the Internet and in many books.

The Web server software, or HTTP servers, respond to browser requests for documents and files, and can also perform tasks for browsers through a standard API known as a Common Gateway Interface (CGI). Through CGI, it is possible to produce HTML documents dynamically from database information available on the host system.

The Basic Web Utility provides an easy-to-use interface between the CGI API and Business Basic programs, enabling quick development of Web-based applications that read and write legacy data stored in Business Basic data files. There are a large number of uses for this technology, both for internal networks and for businesses that share data with other businesses. For example, a Web-based product catalog that comes directly from a live inventory file, with up-to-the-second product availability information, and always-current pricing information.

The Basic Web Utility is a set of CALLable Business Basic programs and platform-specific scripts or programs that interface Business Basic programs using the Basic Web Utility to various Web server platforms.

Before You Begin

Before using the Basic Web Utility, a Web server must be installed and operating on the same system where Business Basic is operating. The Web server must also be configured with a method of invoking CGI scripts (this is the default configuration). An understanding of the naming conventions and directory locations for CGI is essential.

Developers should be familiar with:

- A Web browser, such as Netscape Navigator or Microsoft Internet Explorer.
- HTML and how browsers display HTML documents.
- Business Basic concepts of string templates and global variables or STBL() values.

Basic Web Utility Contents

Toolkit Contents

- UNIX shell scripts for launching Business Basic programs as CGI scripts. Both on-demand and shared directory models are supported.
- Visual PRO/5 version of Business Basic Windows executables for launching either standard (console-based) CGI or WIN-CGI applications.
- Business Basic programs (ut*.wbb) designed to simplify Business Basic CGI programs. Most of these programs are CALLed.
- Business Basic programs (rs*.wbb) to perform simple data transfer over a dedicated serial line, facilitating safe data access to live data from a nearby Web server.
- Business Basic programs (rs*.wbb) to perform simple data transfer over a dedicated serial line, facilitating safe data access to live data from a nearby Web server.

Installing and Configuring the Basic Web Utility

UNIX

The Basic Web Utility works with PRO/5 on any version of UNIX and with any Web server that supports standard CGI. All Web servers support standard CGI, including NCSA, Cern, Apache, and Netscape.

To install the Basic Web Utility, copy bwu.sh to a CGI directory, or a name recognized as a CGI script (.cgi.). Then, edit the script to start both PRO/5 and the program to run.

Parameter	Description
PGM	The program to run when PRO/5 starts
MEM	An optional parameter defining the amount of memory to start the application with. The default is 512.
MAXTRIES	The number of times the script attempts to start PRO/5 in the event of an error, such as maximum users exceeded.
ERRORLOG	The file to store messages when MAXTRIES is exceeded.
CONFIG	The config.bbx file used by the application.
BBEXEC	The path to the PRO/5 executable.

Windows 95 and Windows NT

The Basic Web Utility for Windows 95 and Windows NT is more complicated to set up and configure than for UNIX. As an overview, a windows executable is run from the webserver's scripting directory. This program reads in a configuration file, and executes Visual PRO/5. Visual PRO/5 runs a program that creates the desired webpage, and writes the resultant HTML source to a temporary file. The windows executable then passes the contents of this file back to the browser, and the web page is displayed.

Because the Windows operating system does not handle stdin and stdout in the same manner as the UNIX operating system, Visual PRO/5 must be run in I/O mode and must utilize temporary files to send information back to the browser. These temporary files are created in the web server's scripting directory, so Visual PRO/5 must have WRITE permissions to that directory. Additionally, the webserver's home drive must not be DSKSYN'd, so that Visual PRO/5 can manipulate these files.

Two separate executables, stdcgi.exe and wincgi.exe, are provided to manage the process. The stdcgi.exe program supports the Standard CGI specification, and is more commonly used. This program should be used when the webserver is running Microsoft IIs or Microsoft Personal Web Server for Windows NT or Windows 95. The wincgi.exe program is used for web servers that do not support the Standard CGI specification, but rather support the Win CGI specification instead.

When Visual PRO/5 is run on the server, it is executed in the background. This means that SYSWINDOW will not be available for debugging purposes. If Visual PRO/5 encounters an untrapped error while running a program, it will stop running the program and display the error in console mode. Since it is in the server's background, this window will not be visible and it will appear as though both the Client and web server are hung. In reality, they are simply waiting for the Visual PRO/5 session to complete. Because of this, it is very important that all of the programs trap for unanticipated errors. This is typically done with the SETERR verb.

The first step in configuring the utility set is to copy the appropriate cgi executable (stdcgi.exe or wincgi.exe) to a scripting directory on the Windows web server, typically called wwwroot/cgi or wwwroot/cgi-bin. The wwwroot directory is the root directory of your web server and the cgi or cgi-bin directory contains scripts and programs that are executed by the web server.

Two associated .bat files, stdcgi.bat and wincgi.bat, are text files designed to contain configuration parameters used by the executables to specify howVisual PRO/5 should be run. The .bat file extension is used for historical reasons, and these files are never actually executed as a typical batch file. The appropriate .bat file should be copied to the same directory as the .exe file mentioned above. Both the .exe file and .bat file may be renamed to something more descriptive, such as custquery.exe and custquery.bat. However, they must retain their original extension and the root of the file name must be the same for both files. This allows you to define multiple queries for use with the web server.

The next step is to edit the .bat file to modify the BBPROG, BBEXEC, BBCONFIG, MEM, BBTERM, and USERID parameters. These parameters are used to tell the cgi executable how to find Visual PRO/5 and what startup options to pass to it. Note that when specifying paths for Visual PRO/5, the configuration file, and the program file, all directories with spaces in their names should be changed to reference the short name. For example, if Visual PRO/5 exists as c:\program files\basis\vpro5\vpro5.exe, the BBEXEC should be set to c:\progra~1\basis\vpro5\vpro5.exe.

Parameter	Description
BBPROG	Specifies the program that Visual PRO/5 will run. This program will be responsible for creating the contents of the resultant html page.
BBEXEC	Specifies the full path to the vpro5 executable.
BBCONFIG	Specifies the config.bbx file to be used by Visual PRO/5. The configuration file should have an alias that matches the BBTERM value below. It must also have proper DSKSYN's and a PREFIX that allows Visual PRO/5 to load the Basic Web Utility programs and the program specified by BBPROG above.
MEM	Specifies the amount of memory to start the Visual PRO/5 with.

Parameter	Description
BBTERM	Refers to a terminal alias in BBCONFIG. Often, this has an invisible or minimized mode. Note that some web servers will not allow a console mode window to activate, regardless of this setting. In this case, debugging must be done with error trapping and logging.
USERID	Specifies the userid value to use when connecting to a data server. If no Data Server is required, use a dummy value.

Requisite Knowledge

Before using BB-Web, you must install and run a Web server on the same system where Business Basic is operating. The Web server will need to be configured with at least one way of invoking CGI scripts (this is always the default configuration anyway, but an understanding of the naming conventions and directory locations for CGI is essential).

You must be familiar with the use of a Web browser, such as Netscape Navigator or Microsoft Internet Explorer.

You must have a basic understanding of HTML, and how browsers display HTML documents.

There are scores of good books about HTML as well as many sources of information on the Internet as well.

You must be familiar with Business Basic, and in particular the relatively new concepts of string templates and global variables or STBL( ) values (new, that is, relative to the age of the Business Basic language).

Configuration Requirements and Samples after Installation

To use Basic Web Utility, ensure the following are installed:

- A Web Server such as Microsoft Personal Web Server (PWS), or IIS (Internet Information Server)
- Visual PRO/5 revision 2.x
- The utility set BASIC WEB UTILITY

Configuration

Visual PRO/5 Configuration

The config.bbx file can be modified to contain only minimal information to get Basic Web Utility to work. For example, assuming that Web Server, Basic Web Utility, and Visual PRO/5 reside in different subdirectories on D:\, create a WebConfg.bbx file:

```
ALIASES=100
FCBS=128
CIBS=128
STBLEN=4096
SETOPTS 00000060000000
PREFIX D:/BBW/ D:/BBW/progs/ D:/BBW/temp/
alias T0 syswindow
DSKSYN A:
DSKSYN B:
DSKSYN C:
DSKSYN E:
...
DSKSYN Z:
```

In the stdcgi.bat file that was copied to D:\wwwroot\cgi-bin, make the following changes:

```
set BBPROG=Webtest.bbx
```

```
set BBEXEC=d:\basis\vpro5\vpro5.exe
set BBCONFIG=d:\basis\vpro5\WebConfg.bbx
set MEM=1024
set BBTERM=IO
set USERID=dummy
```

If a shortcut is created for testing purposes, set the Working Directory to D:\wwwroot\cgi-bin because this is where the program will reside. Run Visual PRO/5 with the following command line:

```
D:\basis\vpro5\vpro5.exe -tT0 -m1024 -cD:\basis\vpro5\WebConfg.bbx
```

Enter the following program and save it to D:\BBW\progs\ as Webtest.bbx:

```
0005 SETERR 50
0010 CALL "utcgi.wbb",ENV$,CGI$,ERRMSG$
0020 CALL "uttags.wbb","h1","My First Web Test Program",HTML$
0030 CALL "utsend.wbb",HTML$
0040 CALL "utexit.wbb",CGI$
0050 RELEASE
```

Executing the CGI Program/Script

Start the browser (Internet Explorer or Netscape), and point it to the web server's cgi-bin directory/stdcgi.exe. For example:

```
http://web_server/cgi-bin/stdcgi.exe
```

Once it finds the Web Server and executes the program saved above, the words "My First Web Test Program" are displayed in a bold header font.

Troubleshooting

Errors can often occur when developing web-based applications, and the above suggestions combined with the following troubleshooting guide can help get an application working quickly.

Error Messages

Remember, all applications should include error trapping to handle any problems that may arise. Errors that can be trapped include user escapes, missing files, and end of file errors. These errors can occur outside the calls to the Basic Web Utility set.

The BASIS Web Utility programs include error trapping as an aid during the development cycle. If any errors occur, a log file (BWWERR.log) is created in the current working directory of the program being run. This may not necessarily be the current working directory of PRO/5, but the directory where the script (stdcgi.exe) resides.

Errors returned by the stdcgi.exe (reported to the browser and the BWWERR.log) are:

Error Message	Description
"Can’t generate work file 1"	Could not create the first temporary file.
"Can’t open work file 1"	Could not open the first temporary file.
"Can’t generate work file 2"	Could not create the second temporary file.
"Can’t open work file 2"	Could not open the second temporary file.
"Can’t open parameter file stdcgi.bat"	Could not open the batch file.
"Couldn’t start task!"	Could not start vpro5.(or other exe specified in the batch file).
"Result couldn’t be found"	Could not open temp file that contains the output from vpro5.

Errors returned by the wincgi.exe (reported to the browser and the BWWERR.log) are:

Error Message	Description
"Can’t open parameter file wincgi.bat"	Could not open the batch file.
"Sorry: can’t start CGI task. Try again later"	Could not start vpro5 (or other exe specified in the batch file).

Debugging Programs during Development

The most common method of debugging a program is to single step through it. (Additional information on the single step verb can be found in the Commands Manual under ‘Single Step.’) Always set Byte 1 Bit 08 of the options vector before beginning, or errors may occur in public (or called) programs. This also enables console mode and debugging in public programs.

An alternate method of debugging an application is to have the program create dummy files before each step of the program. This method makes it possible to know exactly which utility failed. Using the example from the Configuration section above, a line was added to create a string file before each call to a Basic Web Utility program to help determine exactly which call failed.

```
0005 STRING "d:/bwu/progs/bwustarted",ERR=0050
0010 CALL "utcgi.wbb",ENV$,CGI$,ERRMSG$
0015 STRING "d:/bwu/progs/bwu15",ERR=0050
0020 CALL "uttags.wbb","h1"," My First Web Test Program",HTML$
0025 STRING "d:/bwu/progs/bwu25",ERR=0050
0030 CALL "utsend.wbb",HTML$
0035 STRING "d:/bwu/progs/bwu35",ERR=0050
0040 CALL "utexit.wbb",CGI$
0045 STRING "d:/bwu/progs/bwuworked",ERR=0050
0050 RELEASE
```

CGI - Basic Web Utility Applications

CGI Application

A Web server receives a request for a document that is (through naming conventions or directory mapping) an executable program.

The Web server establishes an environment and starts the program. In some cases the program passes data to the standard input handle of the script process. The environment variables, plus the format definition of the data sent on the standard input channel to the executable, are defined by the CGI specification.

The program sends an HTML document back to the server on its standard output handle and then exits. The server, in turn, sends the document back to the browser that made the original request.

Some servers running in non-UNIX environments have additional methods of communicating with the executable. An example is O'Reilly's WebSite for Windows NT and Windows 95, which uses a file-based interface called "Win-CGI".

Netscape's Fast Start server also supports Win-CGI.

The data passed to the program is normally made up of name=value pairs, passed either through the document request itself or through an HTML form. The program evaluates the names and associated values, performs an action based on the data, and returns an HTML formatted document. An example follows:

http://www.yourcomp.com/cgi/showcust?custnum=5

In this example, the executable "showcust" is given the data "custnum=5", which is used to find a customer record and format an HTML document showing customer information.

Because Business Basic interpreters cannot directly communicate with the Web server, a middle layer is provided by the Basic Web Utility. There are two methods used by the Basic Web Utility: the on-demand method and the shared directory method.

On-Demand Method

The most efficient method is to start a Business Basic task for each request. Because requests are usually answered quickly, and the task exits, problems with user count restrictions are few. A shell script, called "bwu.sh", is included with the Basic Web Utility and can be used for this interface method. Also, bwu.sh can be copied to a PATHed directory and CGI scripts written:

```
#!/bin/sh
PGM=program.bb; export PGM
MEM=512; export MEM
exec bwu.sh
```

Replace program.bb with the Business Basic program name to be started by bwu.sh. An alternative is to copy bwu.sh to the desired script name in the CGI directory and edit it to include the PGM and MEM variables internal to that script.

With Windows NT and Windows 95, use the stdcgi.exe or wincgi.exe, depending on the web server's CGI support. Most support standard CGI. Others, such as O'Reilly Website, also support Win-CGI. Associated ".bat" files must be provided for stdcgi.exe and wincgi.exe to work.

On-Demand Programming Example

Once the Business Basic program is started, it must read the CGI input and develop a HTML response. A CALL to "utcgi.wbb" is needed to read the input. A variety of routines are available to produce the output and should be sent out through CALLs to "utsend.wbb". When the output is complete, a CALL to "utexit.wbb" completes the task. Below is an example that builds a list from a small file:

```
call "utcgi.wbb",env$,cgi$,errmsg$
call "uttags.wbb","h1","Data File Listing",html$
dim tpl$:"id:c(5),name:c(30)"
line$="<li> [id] [name]"
chan=unt; open(chan)"data.fil"
call "uthtmfil.wbb", chan, "", "", 0,0,0,"", tpl$,line$,work$, ""
call "uttags.wbb","ul",work$,html$
call "utsend.wbb",html$
```

```
call "utexit.wbb",cgi$
release
```

This example was created with the following steps:

1. The CGI input is read.
2. A HTML heading is placed into the variable html$
3. A template is defined for reading data from "data.fil".
4. A line structure is specified to be used for each record from the file.
5. The file is opened.
6. A list of all records, using the specified line$ structure for each, is placed in work$.
7. The "unordered list" tags are added to work$, and the result is added to html$.
8. html$, which now contains a HTML document, is sent back to the user.
9. The task is formatted and released.

Shared Directory Method

A second method uses a shared directory, with a script or other executable started by the Web Server generating files that contain requests, and one or more Business Basic tasks running in the background, monitoring the same directory and producing results in associated files. This method is less efficient that the on-demand method, but it allows control of user counts, and can also be implemented in environments where Business Basic cannot work with standard input and output handles.

The Business Basic program "utwatch.wbb" can be in the background and watch a directory or run other programs based on requests in that directory. The UNIX shell script bwu2.sh can also be used to create shared directory requests.

Shared Directory Programming Example

In the on-demand mode, the Business Basic program is RELEASEd, while in the shared directory mode, the program "utwatch.wbb" is repeated until the next request. An option in BBx4/Pro5 installations uses the BACKGROUND directive to start utwatch.wbb before completing the request. The program starts more quickly to respond to other requests and takes advantage of the BASIS user count logic of eight background slots per foreground slot. When BACKGROUND is used successfully, the task running in background should RELEASE:

The first attempt to pass control back is with the "background" verb. If successful, the current program is running under a different task, and it sets the bkg variable flag to 1. The original task again runs utwatch.wbb. Note that utcgi.wbb must be called before the background verb because if successful, standard input handles are no longer available. This example is identical to the previous one, except that control is passed back to the program "utwatch.wbb", rather than to the operating system.

```
call "utcgi.wbb",env$,cgi$,errmsg$
rem "-- try background
bkg=0
background "utwatch.wbb",err=continue
bkg=1
continue:
call "uttags.wbb","h1","Data File Listing",html$
dim tpl$:"id:c(5),name:c(30)"
line$="<li> [id] [name]"
chan=unt; open(chan)"data.fil"
call "uthtmfil.wbb", chan, "", "", 0,0,0,"", tpl$,line$,work$, ""
call "uttags.wbb","ul",work$,html$
call "utsend.wbb",html$
call "utexit.wbb",cgi$
rem "-- if background worked, then release
if bkg then release
run "utwatch.wbb"
```

Data Templates

Many of the programs in the Basic Web Utility depend on data definitions found in string templates for data formatting and conversion. HTML, however, is a text format, with no provision to convert data to or from binary formats, or to filter invalid data before it is passed to or received from the server.

The Basic Web Utility automatically performs translations to convert data between HTML text and the internal format used by Business Basic. This is controlled with the data templates, both through the data type included with each template data field, and through user-defined attributes.

The following user-defined attributes may be used to allow the Basic Web Utility to properly handle data stored in various formats:

Text Fields

case=upper case=lower case=proper	Force text case on input and output.
caption=phrase	This caption is used by default when generating forms or HTML documents using the utfrmgen.wbb and uthtmgen.wbb programs. Captions may not contain spaces because of the way user attributes are accessed. Therefore, the Basic Web Utility converts underscores to spaces ("Customer_Name" becomes "Customer Name").
mask=format	Use the STR(data:"format") for output, and utcstr.wbb option to map input for text values such as zip codes or phone numbers, where there is formatted external presentation but unformatted internal storage.
passthru=y	If set to "y", then output data is NOT scanned for correction of HTML entity markup characters. This allows HTML-formatted text to be included in the data.

image=y	If set to "y", then output is formatted as a HTML <img src=data> tag.
keys=item-list	The uthtmgen.wbb and utfrmgen.wbb programs can format check lists, radio buttons, and selection lists from
the formtype,	keys, vals and sep values. These can be placed in the field tags parsed by these programs or can be set to the defaults in the data template.
	item-list is a list of items keys, with no spaces (use underscores for spaces), delimited by the sepchar value or a semicolon if no sepchar is specified.
vals=desc-list	desc-list is a list of descriptions associated with the keys in item-list. The descriptions cannot contain spaces (use underscores for spaces). Each description is delimited by the sepchar value or a semicolon if no sepchar is specified.
sep=sepchar	sepchar species the delimiter character or characters used in the item-list and desc-list. If the value begins and ends with a "$", it is assumed to be a hexadecimal value.
formtype=form	form-entry-type can be text, memo, radio, checkbox, list, mlist, image, file, or entry typehidden. This serves as the default entry type in form generation. Hidden values are suppressed from text generated by uthtmout.wbb.
wrap=value	For "memo" type fields, adds a wrap=value option to the <textarea> tag.
multisep=sepval	If the data field can store multiple occurrences, sepval defines the separator character used to delimit individual occurrences. If sepval starts and ends with a "$", it is assumed to be a hexadecimal value.
border=pixels	Specifies that a table used to format checkbox and radio button columns and rows have a border around each cell.
cols=columns	Specifies the default number of columns when generating checkbox, radio buttons, or memo fields in form generation.

rows=rows	Specifies the default number or rows when generating checkbox, radio buttons, selection lists, or memo fields in form generation.

Numeric Fields

scale=n

Scale number by n decimal places. The internal number 10000 becomes 100.00 when n is 2. The external number 10.01 becomes 1001 when stored.

mask=format

Use format for output. All numerics not interpreted as dates are processed with utcnum.wbb on input.

Caption=phrase

See Text Fields, above.

Date Fields

date=format	Dates default to Julian integer format. If format is anything other than a known format, Julian storage is assumed. Custom formats include: • mdy (MMDDYY) • mdyy (MMDDYYYY) • ymd (YYMMDD) • yymd (YYYYMMDD) • dmy (DDMMYY) • dmyy (DDMMYYYY) • jul (julian integer) • dtm (julian date with time precision)

Caption=phrase See Text Fields, above.

Sample Program Reference

Sample Program Reference Overview

The sample programs provided with the Basic Web Utility can be used as learning guides as well as the basis for practical CGI programs.

A UNIX shell script to start a specific Business Basic program, "demobbw.bbx," establishes the Basic Web Utility CGI environment. It then locates the CGI value of "pgm" to determine which sample program to run. If no pgm value is specified, a menu is presented.

The Customer Inquiry application uses the programs democlst.bbx and demoilst.bbx. These in turn use the HTML document template files democlst.txt and demoilst.txt.

The Customer Maintenance application uses the programs democent.bbx and democupd.bbx. The democent.bbx links to the customer list program presented in the Customer Inquiry application. These programs do not use HTML templates.

Source code and comments for each of the sample applications are presented on the following pages.

CGI Startup Shell Script

The shell script "bwu.sh" is copied to a cgi directory and named "demobbw.sh". Most servers contain a standard "cgi-bin" directory in the directory mapping structure defined in the server configuration files.

```
#!/bin/sh
# Copyright (C) 1996 by Allen Miglore. All rights reserved.
# bwu.sh is a standard shell script that can be used to start a
# BBx/Pro5 task in a UNIX environment. This script can be copied
# to the cgi directory, given whatever name you need, or it can
# be used as is by other scripts that would set PGM and optionally
# MEM before exec'ing this script.
# Set PGM and MEM to desired values for the bbx program and start size.
# (these can be set in another script, that execs this one.)
```

The PGM environment variable must be set to the name of the Business Basic program (in this case, "demobbw.bbx"). If the program requires more or less than 512 pages, the MEM variable can also be set. The values for ERRORLOG , CONFIG , AND BBXEXEC must also be modified to match the configuration. The file name ERRORLOG stores messages related to problems starting Business Basic. CONFIG points to the PRO/5 configuration file used by Basic Web Utility programs, and BBXEXEC is the name of the PRO/5 executable.

The CONFIG file must be edited so the PREFIX contains the Basic Web Utility installation directory.

```
PGM=demobbw.bbx
#MEM=512
# modify these values per your bbx configuration
MAXTRIES=5
ERRORLOG=/usr/lib/pro5/webb/error.log
CONFIG=/usr/lib/pro5/webb/bbweb.cnf
BBXEXEC=/usr/lib/pro5/pro5
MEM=${MEM:=512}
if [ "$PGM" = "" ]
then
echo "Content-type: text/plain"
echo ""
```

```
echo "Invalid pgm argument"
exit
fi
umask 0
RETRIES=0
This section starts PRO/5. If it fails, it retries, sends the user an HTML message,
and records the error to the
ERRORLOG file.
until [ $RETRIES -gt $MAXTRIES ]
do
$BBXEXEC -q -c$CONFIG -m$MEM $PGM - "$@" 2>/tmp/bberr.$$
if [ -s /tmp/bberr.$$ ]
then
RETRIES=‘expr $RETRIES + 1‘
sleep 1
read msg </tmp/bberr.$$
rm /tmp/bberr.$$ 2>/dev/null
else
RETRIES=99
rm /tmp/bberr.$$ 2>/dev/null
fi
done
if [ ! "$RETRIES" = "99" ]
then
echo ‘date‘ $msg >>$ERRORLOG 2>/dev/null
echo "Content-type: text/plain"
echo ""
echo "The database server is too busy. Sorry about that."
echo "Please try again later."
echo ""
echo "By the way, we have recorded this problem, and will add"
echo "capacity if it happens frequently."
fi
```

Startup Program - demobbw.bbx

This program is started by the demobbw.sh shell script. It loads the CGI environment with a CALL to "utcgi.wbb" and creates the data templates used by the other sample programs.

```
0010 REM "demobbw.bbx - startup for Basic Web Utility demo programs
0020 REM "Copyright 1996 by Allen Miglore. All rights reserved.
0100 REM ^100 - Introduction
0110 REM "This is the startup routine used by the Basic Web Utility demo
0120 REM "program. It reads the CGI input stream, sets up the
0130 REM "data templates, loads a salesperson code table, and then runs
0140 REM "a specified program. The default program is a customer list.
0200 REM ^100 - get cgi inputs
0210 CALL "utaddr.wbb"
0220 CALL "utcgi.wbb",ENV$,CGI$,ERRMSG$;IF ERRMSG$>"" THEN
GOTO LOADERROR
0300 REM ^100 Dim templates used by the files
0310 DIM
CUST$:"cust_id:c(5*),name:c(30*):case=upper:,addr1:c(30):caption=Address_1
case=upper:,
addr2:c(30*):caption=Address_2
case=upper:,city:c(20*):case=upper:,state:c(2*):case=upper:,zip:c(5*),
phone:c(10*):mask=(000)-000-
0000:,date_last_sale:c(8):date=yymd:,date_last_pmt:c(8*):date=yymd:,
class:c(2),slsp:c(3):keys={stbl_$SLSPID} vals={stbl_$SLSPNM} sep=\\\
formtype=list rows=1:,
terms:c(2*),credit_limit:n(8*):mask=###,##0-
:,ytd_sales:n(10*):mask=###,##0.00-:,
mtd_sales:n(10*):mask=###,##0.00-:,ytd_cost:n(10*):mask=###,##0.00-
:,mtd_cost:n(10*):mask=###,##0.00-:"
0320 DIM
INVOICE$:"cust_id:c(5),invoice:c(5),date:n(8):date=jul:,slsp:c(3),fill:c(2):formty
pe=hidden:,
amount:i(4):scale=2 mask=###,##0.00-:"0330 DIM
SLSP$:"slsp_id:c(3*),name:c(20*)"
```

In the CUST$ data template, a list of keys and descriptions are referred to by the global string values $SLSPID and $SLSPNM. These lists are loaded here, and when other routines generate selection lists or displays of salesperson values, the ID's and names are used.

```
0400 REM ^100 - load the STBL's for $SLSPID and $SLSPNM
0410 REM "The CUST$ template references keys and vals for the slsp field.
0420 REM "This facilitates the default use of a select list object for
0430 REM "entry forms, and also will cause HTML merges to use the name
0440 REM "rather than the id for display purposes. Note that placing
0450 REM "these references in the template merely serves to provide
0460 REM "default formatting, and that can be overridden in any given
0470 REM "situation.
0480 LET SLSPCHAN=UNT;OPEN (SLSPCHAN)"GENSMPL2"
0490 LET IDS$="",NAMES$=""
0500 READ RECORD(SLSPCHAN,END=0520)SLSP$
0510 LET
IDS$=IDS$+SLSP.SLSP_ID$+"\\\",NAMES$=NAMES$+SLSP.NAME$+"\\\";G
OTO 0500
0520 LET
X$=STBL("$SLSPID",IDS$),X$=STBL("$SLSPNM",NAMES$),IDS$="",NAM
ES$=""
0530 CLOSE (SLSPCHAN)
```

Now that the setup is complete, the program branches to the program specified in the CGI input value "pgm". If no pgm value is specified, or an invalid pgm is specified, the HTML document "demomenu.txt" is loaded and displayed. By using the text "{include filename}" and calling "utmeta.wbb", a disk-based document can be loaded.

```
0600 REM ^100 - Run the program specified in pgm, or default to the menu.
0610 RUN FIELD(CGI$,"pgm",ERR=0620),ERR=0620
0620 LET TEXT$="{include demomenu.txt}"
0630 CALL "utmeta.wbb","",TEXT$
0640 CALL "utsend.wbb",TEXT$
0650 DONE: RELEASE
1000 LOADERROR:
REM ^1000 - problem with utcgi - fatal problem
```

```
1010 REM "If we are here, there was a REAL BIG PROBLEM. Without
1020 REM "proper initialization, the DOS/WIN environment has no way
1030 REM "of contacting the browser of this, so the best thing is
1040 REM "just to leave gracefully but silently. On UNIX, with
1050 REM "stdout support, a notification of the error can be sent
1060 REM "to the browser.
1070 IF POS("DOS"=INFO(0,0))>0 OR POS("WIN"=INFO(0,0))>0 THEN
GOTO DONE
1080 PRINT "Content-type: text/html",$0A$
1090 PRINT "The following error message was returned by utcgi.wbb:<br>"
1100 PRINT ERRMSG$
1110 GOTO DONE
```

Scrolling Customer Listing - democlst.bbx

This program is used by both sample applications and is the lead program in the Customer Inquiry application in which customers are listed. Each customer has a link to a detailed invoice page. It is also used to select a customer to edit in the Customer Maintenance application.

The program reads up to 10 customer records, in name order, from the customer master file, using key chain 1 (the Name sort key). If additional records are available (there are about 30 in the file), a "More records..." link is provided to continue the list.

```
0001 SETERR ERRTRAP
0010 REM "democlst.bbx - Basic Web Utility Customer Listing Demo
0020 REM "Copyright 1996 by Allen Miglore. All rights reserved.
0030 REM "Permission to derive programs from this is hereby granted,
0040 REM "provided said programs utilize licensed copies of the Basic Web
Utility.
0100 REM ^100 - If restarting this list, the CGI field "startwith"
0110 REM will contain the starting point. This can come
0120 REM either from the form contained at the end of the
0130 REM democlst.txt HTML template, or from the "more records"
0140 REM continuation link.
```

A CGI variable "startwith" is passed to this program in two cases. If the current execution is a continuation of the list, then the "more records" URL will contain this field In addition, at the bottom of the HTML display is a form with a "startwith" entry field to allow the user to restart the list at any time.

```
0150 LET STARTWITH$="",
STARTWITH$=CVS(FIELD(CGI$,"startwith",ERR=0200),4)
```

These lines set the values for the uthtmfil.wbb program, identifying the key chain, records per page, and record structure. The HTML template file, democlst.txt, contains a place marker between the "
" and "
" (unordered list) tags. The structure includes a "<li>" (list element) tag so that each record becomes another bullet item in the document. The name field is treated as a link, and the link is specified in the variable LINKEXPR$, which is constructed to run a program with the CGI value, "cust_id", set to the customer number of any given record. The program defaults to the sample invoice list "demoilst.bbx" but can be specified in the CGI value "linkto". The Customer Maintenance application uses the "linkto" value to load and edit a customer record.

```
0200 REM ^100 - Initialize other values
0210 LET KNUM=1,MAXRECS=10
0220 LET STRUCTURE$="<li> [name @link] ([cust_id]), [city], [state] [zip],
[phone]"
0300 REM ^100 - Construct a link expression, used to link each customer
0310 REM to a specified program for further display/edit
0320 LET LINKEXPR$=ENV.SCRIPT_NAME$+"?cust_id=[cust_id @encode]"
0330 LET
LINKTO$="demoilst.bbx",LINKTO$=FIELD(CGI$,"linkto",ERR=0340)
0340 LET LINKEXPR$=LINKEXPR$+"&pgm="+LINKTO$
0400 REM ^100 - Open Customer Data File
0410 LET CUSTCHAN=UNT;OPEN (CUSTCHAN)"GENSMPL1"
```

After opening the customer master file, the uthtmfil.wbb program generates a list of records in the CUSTLIST$ variable and lists up to MAXRECS records. The list starts with the value in STARTWITH$ and continues until the end of the file. If the variable CURKEY$ is returned with a value, the end of the file was not reached, and a "More records" URL is constructed to continue where the list ended. This URL is placed in the global string $MOREURL, which is referenced in the HTML text template democlst.txt.

```
0500 REM ^100 - Construct List
0510 REM uthtmfil.wbb reads from a channel, and builds list of
0520 REM records, using a particular structure, into a string
0530 CALL "uthtmfil.wbb", CUSTCHAN, STARTWITH$, "", KNUM,
MAXRECS, COUNT, CURKEY$, CUST$,
STRUCTURE$, CUSTLIST$,LINKEXPR$
```

```
0600 REM ^100 - If there are more records in the file, add a "more records"
0610 REM link URL to continue. curkey$ contains the key to the
0620 REM next record required. By placing this in a STBL, the
0630 REM uthtmout.wbb program that loads the HTML template can
0640 REM conditionally place it after the list.
0650 LET X$=STBL("$MOREURL","");IF CURKEY$="" THEN GOTO 0680
0660 CALL "utencode.wbb",0,CURKEY$,NEXT_STARTWITH$
0670 LET
MOREURL$=STBL("$MOREURL",ENV.SCRIPT_NAME$+"?pgm=democlst.b
bx&startwith="+NEXT_STARTWITH $)
```

The HTML file, democlst.txt, is loaded and parsed into the variable HTML$. In that file is a comment "<!-- List Here -->", which is substituted with the contents of the CUSTLIST$ variable, generated above. The full text of HTML$ is sent with the utsend.wbb program, and the program exits. In version 1.1, two global string values are created automatically by uthtmfil: $list contains the record list returned in custlist$, and $moreurl contains either null (if the end of file is reached), or a URL to continue the list. These can be referenced in democlst.txt as [$list] and [$moreurl], respectively.

```
0680 REM ^100 - Load the HTML template, and add the list to it
0690 CALL "uthtmout.wbb",CGI$,"{include democlst.txt}",HTML$,""
0700 CALL "utsub.wbb",HTML$,"<!-- List Here -->",CUSTLIST$
0800 REM ^100 - Send it to the user
0810 CALL "utsend.wbb",HTML$
1000 DONE: REM ^1000 - Clean up and exit
1010 CALL "utexit.wbb",CGI$
1020 IF RETURN_TO_WATCH THEN RUN "utwatch.wbb"
1030 RELEASE
```

It is important to trap all errors because Basic Web Utility programs run in background mode.

```
2000 ERRTRAP: REM ^1000 - generic error trap
2010 CALL "uterr.wbb",ERR,TCB(5),PGM(-2)
2020 GOTO DONE
```

Customer Invoice History - demoilst.bbx

The customer invoice history display is used by the Customer Inquiry application to show a listing of invoices associated with a given customer. The application uses the Scrolling Customer Listing program, and each customer listed is linked to this program through a URL containing the customer ID.

```
0001 SETERR ERRTRAP
0010 REM "demoilst.bbx - Basic Web Utility Customer Invoice Listing Demo
0020 REM "Copyright 1996 by Allen Miglore. All rights reserved.
0030 REM "Permission to derive programs from this is hereby granted,
0040 REM "provided said programs utilize licensed copies of the Basic Web
Utility.
```

As with the scrolling customer listing, a "startwith" value can be supplied to begin the invoice listing at a particular point. A "more records" link, containing the "startwith" value, is specified in this program where there are more than 10 invoices to display.

```
0100 REM ^100 - If continuing the invoice list, the CGI field
0110 REM "startwith" is used to indicate what invoice.
0120 LET STARTWITH$="",STARTWITH$=FIELD(CGI$,"startwith",
ERR=0130)
```

The invoices are presented in a HTML table structure, so each line from the invoices file is formatted with table row tags. In addition, the table and column heading tags are required above and below the invoice list and are stored in TABLETOP$ and TABLEBOT$.

```
0200 REM ^100 - Initialize other values
0210 LET KNUM=0,MAXRECS=10
0215 LET TABLETOP$="<table border><tr><th>Invoice</th><th>Date</
th><th>Amount</th></tr>"
0220 LET STRUCTURE$="<tr><td>[invoice]</td> <td>[date]</td> <td
align=right>[amount]<br></td></tr>"
0225 LET TABLEBOT$="</table>"
0400 REM ^100 - Open Data Files
0410 LET CUSTCHAN=UNT;OPEN (CUSTCHAN)"GENSMPL1"
```

```
0420 LET INVCHAN=UNT;OPEN (INVCHAN)"GENSMPL3"
```

The customer record is read into CUST$, and a table is built from a list of fields in the CIST$ template. The HTML text for the table is placed in CUSTINFO$.

```
0450 REM ^100 - Get Customer Data and Create Display
0460 READ RECORD(CUSTCHAN,KEY=FIELD(CGI$, "cust_id",
ERR=NODATA), DOM=0470)CUST$
0470 CALL "uthtmgen.wbb",
```

CUST$,"cust_id,name,addr1,addr2,city,state,zip,phone,slsp", "", "table border", "", "", CUSTINFO$ A list of invoices (up to MAXRECS at a time) is loaded into the variable INVLIST$. The list begins with the customer ID, plus the invoice number indicated in the STARTWITH$, and continues until all invoices for the customer ID have been read. If there are more than MAXRECS invoices, the CURKEY$ contains that next one in line, after the customer ID is trimmed off. This is used to construct the global string $MOREURL, which is referenced in the HTML text file "demoilst.txt" to allow the user to continue the list. Note the use of the "startwith" value in the URL.

The CGI environment variable SCRIPT_NAME contains the name of the cgi script that launched this program. Because the same script is used for all the sample programs, it provides a convenient way of building another URL.

```
0500 REM ^100 - Construct Invoice List
0510 REM uthtmfil.wbb reads from a channel, and builds list of
0520 REM records, using a particular structure, into a string
0530 CALL
"uthtmfil.wbb",INVCHAN,CGI.CUST_ID$+STARTWITH$,CGI.CUST_ID$,KN
UM,
MAXRECS,COUNT,CURKEY$,INVOICE$,STRUCTURE$,INVLIST$,""
0540 IF CURKEY$>"" THEN LET
CURKEY$=CURKEY$(LEN(CGI.CUST_ID$)+1)
0600 REM ^100 - If there are more records in the file, add a "more records"
0610 REM link URL to continue. curkey$ contains the key to the
0620 REM next record required. By placing this in a STBL, the
0630 REM uthtmout.wbb program that loads the HTML template can
0640 REM conditionally place it after the list.
```

```
0650 LET X$=STBL("$MOREURL","");IF CURKEY$="" THEN GOTO 0680
0660 CALL "utencode.wbb",0,CURKEY$,NEXT_STARTWITH$
0670 LET MOREURL$=STBL("$MOREURL",ENV.SCRIPT_NAME$+"?pgm=
demoilst.bbx&startwith="+NEXT_STARTWITH$+"&cust_id="+CGI.CUST_ID$
)
```

Both the customer information and the invoice list are substituted into the demoilst.txt file, using specific comments as place markers, with the result sent to the user, and the program exits.

```
0680 REM ^100 - Load the HTML template, and add the list to it
0690 CALL "uthtmout.wbb",CGI$,"{include demoilst.txt}",HTML$,""
0700 CALL "utsub.wbb",HTML$,"<!-- Customer Info -->",CUSTINFO$
0710 CALL "utsub.wbb",HTML$,"<!-- Invoice Table -->",
TABLETOP$+$0A$+INVLIST$+TABLEBOT$
0800 REM ^100 - Send it to the user
0810 CALL "utsend.wbb",HTML$
1000 DONE: REM ^1000 - Clean up and exit
1010 CALL "utexit.wbb",CGI$
1020 IF RETURN_TO_WATCH THEN RUN "utwatch.wbb"
1030 RELEASE
2000 ERRTRAP: REM ^1000 - generic error trap
2010 CALL "uterr.wbb",ERR,TCB(5),PGM(-2)
2020 GOTO DONE
```

Customer Maintenance - democent.bbx

This program generates a customer maintenance form. By default, the form contains no customer data and can be used to create a new customer record. However, if the CGI field "cust_id" is filled in with a valid customer number, that customer record can be edited and updated.

Unlike the prior examples, an HTML document template is not used. Instead, the HTML text is created in the program.

```
0001 SETERR ERRTRAP
0010 REM "democent.bbx - Basic Web Utility demo customer entry form
0020 REM "Copyright 1996 by Allen Miglore. All rights reserved.
0030 REM "Permission to derive programs from this is hereby granted,
0040 REM "provided said programs utilize licensed copies of the Basic Web
Utility.
0100 REM ^100 - Get customer record
```

If the CGI field, "cust_id" contains a valid customer number, and the customer record is loaded into the data template CUST$. Otherwise, the template is initialized from the startup program.

```
0110 LET CUSTCHAN=UNT;OPEN (CUSTCHAN)"GENSMPL1"
0120 READ RECORD(CUSTCHAN, KEY=FIELD(CGI$,"cust_id",ERR=0200),
ERR=0200)CUST$
```

An entry form is generated from the CUST$ data template. The cust_id field is hidden and cannot be edited, though it is passed to the democupd.bbx program. Fields indicated with a "show" option are display-only. The program utfrmgn2.wbb constructs the complete form, including Submit, Reset buttons, and a form tag to start the demobbw.sh script into the variable CUSTFORM$. The non-template field "pgm" is specified as a hidden field. As in URL links, this must be specified for the startup program to run the correct program. The democupd.bbx program is used to update the customer file from the contents of the form.

```
0200 REM ^100 - create entry form, with update link to democupd.bbx
0210 LET FLDS$=FLDS$+"cust_id hidden, name, addr1, addr2, city, state,zip,
phone, slsp, date_last_sale show,
```

```
date_last_pmt show, credit_limit show, mtd_sales show, ytd_sales show, <input
type=hidden name=pgm
value=democupd.bbx>"
0220 CALL "utfrmgn2.wbb",CUST$,FLDS$, "", "table border", "",
ENV.SCRIPT_NAME$,"Update record", "Reset
form", 0, CUSTFORM$
```

Multiple calls to uttags.wbb build the HTML$ document body. Body tags are added, a header is generated, and the complete document is generated into DOCUMENT$. The result is sent to the user, and the program exits. In addition, it is necessary to shuffle HTML$ values with a temporary variable to add surrounding tags, such as and and not double up the text in HTML$ because uttags.wbb always appends to the last argument.

```
0300 REM ^100 - Use uttags.wbb to generate the rest of the document
0310 CALL "uttags.wbb","h1","Customer Entry Form",HTML$
0320 CALL "uttags.wbb","hr","Enter new customer information, or use the
Customer List link",HTML$
0330 CALL "uttags.wbb","","to select a customer record to edit.",HTML$
0340 CALL "uttags.wbb","p,href " + ENV.SCRIPT_NAME$ +
"?pgm=democlst.bbx&linkto=democent.bbx",
"Customer List", HTML$
0350 CALL "uttags.wbb","","  - ",HTML$
0360 CALL "uttags.wbb","href "+ENV.SCRIPT_NAME$,"Return to the Menu",
HTML$
0370 REM "msg$ can be sent from democupd.bbx if there is an error
0380 IF MSG$>"" THEN CALL "uttags.wbb","h3",MSG$,HTML$
0390 LET WORK$=HTML$,HTML$="";CALL
"uttags.wbb","center",WORK$,HTML$
0400 CALL "uttags.wbb","hr",CUSTFORM$,HTML$
0410 CALL "uttags.wbb","body bgcolor=#E8E8E8",HTML$,BODY$
0420 CALL "uttags.wbb","head,title","Basic Web Utility Demo Customer Entry
Form",HEADING$
0430 CALL "uttags.wbb","html",HEADING$+BODY$,DOCUMENT$
0500 REM ^100 - Send it to the user
0510 CALL "utsend.wbb",DOCUMENT$
1000 DONE: REM ^1000 - Clean up and exit
1010 CALL "utexit.wbb",CGI$
```

```
1020 IF RETURN_TO_WATCH THEN RUN "utwatch.wbb"
1030 RELEASE
2000 ERRTRAP: REM ^1000 - generic error trap
2010 CALL "uterr.wbb",ERR,TCB(5),PGM(-2)
2020 GOTO DONE
```

Customer Update - democupd.bbx

This program is launched from the Customer Maintenance form. It reads the CGI input stream for form values and adds or updates the customer record accordingly.

```
0001 SETERR ERRTRAP
0010 REM "democupd.bbx - Basic Web Utility demo customer update from entry
form
0020 REM "Copyright 1996 by Allen Miglore. All rights reserved.
0030 REM "Permission to derive programs from this is hereby granted,
0040 REM "provided said programs utilize licensed copies of the Basic Web
Utility.
0100 REM ^100 - Open customer file
0110 LET CUSTCHAN=UNT;OPEN (CUSTCHAN)"GENSMPL1"
```

For a new customer entry, the CGI value "cust_id" contains blanks, and the program jumps to the new customer entry label. An existing customer, selected from the customer list, will have a hidden value on the form that contains the ID, and the current record is read into CUST$.

```
0200 REM ^100 - Get current record
0210 EXTRACT
RECORD(CUSTCHAN,KEY=CGI.CUST_ID$,DOM=NEW_CUSTOMER)CUST$
```

On an existing record, the contents of the form are updated into the contents of the CUST$ record using the utfrmin.wbb program. The record is then updated, and the program continues.

Concurrency issues are not addressed in the sample programs because the task that loaded the maintenance form cannot retain a lock on the record. There are several methods for managing records that cannot be locked during maintenance. One method is to store a CRC value as a hidden field on the form, calculated from the record used to generate the form. When the current record is loaded in the update program, the CRC values can be compared to determine if a change was made to the record after the form was displayed, and appropriate action can be taken.

```
0300 REM ^100 - Fill in form data
0310 CALL "utfrmin.wbb",CGI$,CUST$
```

```
0400 REM ^100 - Update record
0410 WRITE RECORD(CUSTCHAN)CUST$
```

When the customer is updated or added, a message is stored in MSG$, indicating success. The customer entry program is run, which builds a new form for the customer, showing their changes, and also displays the MSG$ value so the user can see that the last update was successful.

```
0500 CONTINUE: REM ^100 - redisplay form to show updated data
0510 LET MSG$="Updated "+CVS(CUST.NAME$,3)+"
("+CUST.CUST_ID$+")."
0520 DIM CUST$:FATTR(CUST$)
0530 RUN "democent.bbx"
```

When the CGI value "cust_id" does not contain a valid customer number, a new customer is added. The CUST$ data template is filled in from the form CGI data by calling utfrmin.wbb. The customer ID is generated by adding 1 to the last key in the file and formatting a new 5-digit key. Once successful, the program continues.

```
0600 NEW_CUSTOMER: REM ^100 - Get new customer ID by adding 1 to highest
current ID
0610 CALL "utfrmin.wbb",CGI$,CUST$
0620 LET LASTKEY$=KEYL(CUSTCHAN,KNUM=0)
0630 LET
CUST.CUST_ID$=STR(NUM(LASTKEY$)+1:FILL(LEN(CUST.CUST_ID$),"0"))
0640 WRITE RECORD(CUSTCHAN,DOM=NEW_CUSTOMER)CUST$
0650 GOTO CONTINUE
```

Although a normal exit from this program runs utcent.bbx, the error routine may need to exit this way.

```
1000 DONE: REM ^1000 - Clean up and exit
1010 CALL "utexit.wbb",CGI$
1020 IF RETURN_TO_WATCH THEN RUN "utwatch.wbb"
1030 RELEASE
2000 ERRTRAP: REM ^1000 - generic error trap
2010 CALL "uterr.wbb",ERR,TCB(5),PGM(-2)
2020 GOTO DONE
```

Suggestions and Tips

There are a variety of ways to write a given program. The following are some basic steps to make CGI programs more portable and easier to maintain.

- Use a single point of entry for CGI applications. Rather than multiple CGI directories with many scripts, a single script to start a single Business Basic program can be used to determine where to go based on a flag passed through the URL or hidden form fields. The benefits to this method include The startup routine performing the initialization, such as calling utcgi.wbb, creating templates, and loading code tables.

  Parameterize the script name (using ENV.SCRIPT_NAME$) because all routines use the same script. The application becomes more portable to other sites and platforms that may have a different CGI directory structure.

- Use a single point of exit. By using a single exit program, code becomes portable between dynamic and shared-directory methods, as well as other interface methods that may be developed. Ensure that all exits, including error trapping logic, exit through the single routine.

- For tracking large volumes of information between CGI programs, store it in a file rather than a URL and hidden field. Instead of many individual fields, assign and track only a session ID. Keep date and time stamps on session records and periodically clear out old ones. If the application supports cookies, use the automatic session tracking support built into Basic Web Utility 1.1.

- HTML can be generated in programs; however, for complex documents, it is often easier to create HTML files. There are a number of HTML editing programs available that function as word processors. The tags needed by uthtmout.wbb and utfrmout.wbb can be embedded in the file, and the file referred to by a single "include" phrase in any uthtm* or utfrm* program:

  ```
  text$="{include filename.txt}"
  call "uthtmout.wbb", tpl$, text$, html$, ""
  ```

Standard Structure Options

In most Web sites it is important to maintain a consistent appearance on all pages, including those generated by CGI. This can include a consistent background color, tiled image, or a standard header and footer on each page.

The Basic Web Utility looks for the the following case-sensitive global strings:

$title

A required global string that acts as a trigger. All the other global strings are optional. If the string does not exist, the standard structure is not invoked. If it does exist, the following tags are added on the first call to "utsend.wbb".

<html>
<head>
<title>$title</title>
$otherhead
<body $bodyopt>
$stdhead

When "utexit.wbb" is called, and if this global string exists, the following text is added to the document:

$stdfoot
</body>
</html>
$othe
rhead

A global string to add additional HTML heading elements to the document. A common example would be a <META ...> tag, such as <meta name="keywords" content="sdsi;bbweb">. To improve viewing of the HTML source, place a line-feed between each header element in the global string.

$bod
yopt

A global string that, if present, is appended to the <body> tag inside the closing bracket. Establishes default colors or background tile images.

$stdh
ead

A global string to reference a physical disk file that is loaded at the top of each document, just below the <body> tag.

$stdf
oot

A global string references a physical disk file that is loaded at the end of each document by a call to "utexit.wbb".

To invoke the standard structure, the first call to "utsend.wbb" should be the first body text of the document. It is possible to call "utsend.wbb" with a "Location:" or "Content-type:" header. The Basic Web Utility does not interfere with control of the output or the inclusion of the standard structure elements.

If disk files are used as the page source, and standard structure features are also used, eliminate all heading and closing codes generated by the authoring tool. These codes become redundant and appear in the body of the document.

HTTP Cookies

Netscape Corporation introduced the concept of a "cookie" into their Navigator browser, prompting the specification to be incorporated into other browsers. Cookies provide a mechanism for the server to instruct the browser to retain certain data elements, and to pass those data elements back to the server on demand.

Detailed information about cookies can be found on Netscape Corporation's web site: http://home.netscape.com

Cookies are implemented in the Basic Web Utility via global strings. If on the first call to "utsend.wbb", a global string named "$cookies" is defined, it is assumed to be a comma-separated list of cookie names. Cookie names refer to other global strings, with names and values passed to the browser through "Set-Cookie: headers.

For example, if the global string "$cookies" is set to "fe,fi,fo,fum", the Basic Web Utility looks for four global strings and instructs the browser to store their values. In the Netscape cookie specification, there are additional elements other than data values, such as expiration dates and valid domain and path names. These can be added to the value of the global string if desired, and the Basic Web Utility issues the header "Set-Cookie: name=global-string.

The cookie values are returned automatically by the browser in the CGI input stream, and "utcgi.wbb" looks for these and sets the global string values appropriately.

An example of cookie use would be as a session tracking mechanism. If after calling utcgi.wbb, there is no global string "ses_id", a unique code can be generated and placed into a global string "ses_id", and that name can be placed in the global string "$cookies". From that point, whenever that page is loaded, until the browser is closed on the user's system, the ses_id string will be maintained. Using the "expires", "domain", and "path" data in the cookie specification, it would be possible for the session ID to be tracked across an entire application for any length of time.

Automatic Session Tracking

The Basic Web Utility 1.1 automatically manages session information using a single HTTP cookie called $sesid. The format of the session information is defined by creating a global string (STBL) named $sestpl that contains the string template definition for the session. This string must be defined before the application CALLs utcgi.wbb and triggers the internal session management.

```
x$=stbl("$sestpl","name:c(30*),custid:c(10*),items[100]:c(20*)")
call "utcgi.wbb",env$,cgi$,errmsg$
```

In the above example, the session tracks name, custid, and items array fields. Any input from a form or URL that appears in cgi$ is automatically updated in the session values.

To retreive the session record, do one of the following:

```
dim session$:stbl("$sestpl")
session$=stbl("$sesrec")
or
call "utses.wbb",0,session$,errmsg$
```

Use the utses.wbb program to store any manipulated session data as follows:

```
session.custid$="1234"
call "utses.wbb",1,session$,errmsg$
```

Session expiration and deletion is handled automatically based on a 24 hour session lifespan; however, this can be controled with the global string $sesage, which stores a numeric value of hours. This does two things:

- Records stored on the server are automatically purged when the numeric value is reached. This purge takes place each time utcgi.wbb is called with session management triggered. If the value of $sesage is 0 or less, it defaults to 24.

- The cookie used for the session, which is stored on the client (browser) machine, is given an expiration time in hours. If it is set to 0 or less, the browser has no expiration time and expires by default when the user exits the browser.

A session can be manually deleted from the server using the utses.wbb program:

```
call "utses.wbb",2,"",errmsg$
```

For session tracking to work, the user account CGI tasks run under must have write rights to the "utses.dat" file. In addition, if the file is not present the first time session tracking is used, the Basic Web Utility creates the file in the Basic Web Utility directory, and, therefore, must have permission to create the file.

File Uploading Support

Newer browsers such as Netscape 3 support a new form posting protocol that allows data files to be uploaded to a web server. For the browser to send the form using a protocol that supports file uploads, the <form> tag must have the option "enctype=multipart/form-data" added. When the form is submitted, it is formatted differently. In Basic Web Utility 1.1, utcgi.wbb detects this type of form post and loads the cgi$ template accordingly. The only difference is that file fields are loaded with a file name, indicating the location of the uploaded file on the server. The name used is a unique generated name that retains the original extension uploaded by the user. The original filename is stored in the stbl $filename-x, where x is the name of the field on the HTML form. The files are stored in the system temp directory, or in a directory named in the stbl $tempdir.

See the utcgi.wbb reference section for more details.

Global String Reference

Global String (STBL)	Usage
$arraysep	Delimits field names from array element numbers. If $arraysep is "__", then a cgi name of amount__5 would be interpreted as cgi.amount[5]. The default separator is a hyphen (-), but because this conflicts with Javascript code, it may be necessary to use another value valid in Javascript variable names but one that does not conflict with names used in the application. If the value is changed, it must be set before utcgi.wbb is CALLed.
$bbweb-version	Stores the version of the Basic Web Utility.
$bodyopt	Use in standard structure options added to the <body> tag.
$cgi	Stores the data of cgi$ for use in programs that do not have access to cgi$.
$cgitpl	Stores the string template definition for $cgi.
$commdir	Points to the shared directory used by utwatch.wbb and bwu2.sh, if the shared directory model is used by the application. Used by utwatch.wbb and should match the value used by bwu2.sh.
$cookies	Triggers the placement of cookies on the browser. This must be set to a comma-delimited list of names that reference global string values to be stored as cookies. This must be set before the first CALL to utsend.wbb.
$cr	The carriage-return portion of a text file line termination. Null on UNIX and ASCII, 13 on Windows.
$env	Stores the data of env$ to use in programs without access to env$.
$envtpl	Stores the string template definition for $env.

Global String (STBL)	Usage
$errdesc-errnum	The uterr.wbb program reports the description "An error occurred" for any error value passed to it. It does, however, look for this global string for the description. For example, setting $errdesc-0 to "A locked file or record was encountered" would report that message for an error 0.
$filename-fieldname	Stores the user-entered file name when a file upload field is posted from a HTML form. When stored on the web server file system, the Basic Web Utility retains the file extension but renames the file uploaded to a run-time defined name. The original name is stored in this global string.
$imagelib	Provides a path to the physical location of image files. Any data field with a user attribute of image=y is interpreted by the Basic Web Utility to be an image file. In creating the HTML <img src=> tag, the Basic Web Utility attempts to open the file. If the file cannot be located by a PREFIX search, define $imagelib as the physical path to open the file. The Basic Web Utility can then determine the width and height of both .gif and .jpg images and create a <img> tag that is rendered faster by most browsers.
$imageurl	This is added to the beginning of any <img src=> tags generated by the Basic Web Utility. If $imageurl is "/home/images/", and a data field with a user attribute of image=y is "1001.gif", the Basic Web Utility defines the tag as <img src="/home/images/1001.gif">. Note the $imagelib can also help in determining the width and height for the tag.
$infile	An internally maintained value used by utwatch.wbb and utcgi.wbb.
$list	Stores the result of uthtmfil.wbb, uthtmkey.wbb, and uthtmsel.wbb. Use this to merge the results into HTML documents as "[$list]".
$mailerror	Can be defined on a UNIX system with the mail command to notify an administrator of an error reported by uterr.wbb. It should be set to an email address reachable by the web server. It should not be set on a non-UNIX system.

Global String (STBL)	Usage
$memospacer	If the utmmoout.wbb program tries to retain leading spaces, set this global string to "y" to have the Basic Web Utility add <spacer size=cols> to the text. Browsers that support the <spacer> tag will then render the indents.
$memotable	As with the $memospacer, this attempts to retain leading spaces on lines, but uses a <table> structure, with <td colspan=cols> tag to control the spacing. Set this global string to "y" to trigger this behavior.
$moreurl	Stores a URL suitable for continuation of a list generated by uthtmfil.wbb, uthtmkey.wbb, or uthtmsel.wbb. All values sent in CGI$ are retained. Suitable for use in HTML text as More records&ldots;.
$otherhead	Used in standard structure options, added before the <body> tag. Use this tag to add <meta> tags or other tags that go between the <head> and </head> tags (except <title>.)
$outchan	An internally maintained value used by utsend.wbb.
$outfile	An internally maintained value used by utwatch.wbb.
$sesage	If session tracking is turned on (with the $sestpl global string), this value determines the age in hours a session cookie lasts. The default is 24. Setting it to 0 results in the session expiring when the browser is closed.
$sesid	An internally maintained value if session tracking is turned on.
$sesrec	Stores the current session record, whose structure is defined with $sestpl.
$sessioncookie	An internally used value for cookie management.
$sestpl	Stores the string template definition for session state management. If defined before utcgi.wbb is CALLed, the Basic Web Utility manages a session record using this as the record definition.

Global String (STBL)	Usage
$stdfoot	Used in standard structure options. Points to a file to be appended to the end of all output. Used by utexit.wbb.
$stdhead	Used in standard structure options. Points to a file to be placed just after the <body> tag is printed by the first call to utsend.wbb.
$tempdir	Points to a directory to be used for temporary files. If it is not defined, the Basic Web Utility looks for the environment variable TEMP. Then, use the /tmp directory on UNIX, or the current (cgi) directory on Windows. Used by uttempfl.wbb.
$title	Triggers the standard structure options and is placed in the document header inside <title>&ldots;</title> tags.
$url	An internally maintained value used in Win-CGI.
$urltpl	An internally maintained value used in Win-CGI.
$usechan	Used to force the Basic Web Utility to search for available channels above this value. If the Basic Web Utility conflicts with other programs used in an application, set this value to a high number to prevent the Basic Web Utility from using the UNT value to open files.
$waitsec	Used by utwatch.wbb to pause a specified number of seconds between directory scans. The default is one second.

Toolkit Program Reference Overview

The Basic Web Utility toolkit consists of a number of Business Basic programs and operating system executables. Some of the programs are considered high-level programs and they CALL lower-level programs to perform a task. Some routines may CALL other high-level programs to provide a more complete encapsulation of a task.

Toolkit Program Alphabetical Listing

Program	Description	Syntax
rsread.wbb	Read a record by way of an RS-232 serial connection (UNIX only)	call “rsread.wbb",filename$,mode$, ky$,knum,rec$,errmsg$
rsreadm.wbb	Read a record range by way of an RS-232 serial connection (UNIX only)	call rsreadm.wbb",filename$,key1$,key2$,knum,ky$[all],rec$[all],count,errmsg$
rswatch.sh	Watch a RS-232 serial port on a target system (UNIX only)	rswatch.sh -d tty-device -s "stty parameters" -v
utaddr.wbb	ADDR low-level Basic Web Utility Routines	call "utaddr.wbb"
Utcdate.wbb	Convert Text Date to Internal Julian Integer or Date/Time Number	call "utcdate.wbb",strdate$,juldate
Utcdtf.wbb	Convert Typical and OEM Text Date Formats to/from Julian Date	call "utcdtf.wbb",tojul,format$,text$,juldate
Utcgi.wbb	Set Template Variables Based on the Operating System Environment and CGI Input Stream	call "utcgi.wbb",env$,cgi$,errmsg$
Utcgiwin.wbb	Win-CGI Support	(Used internally by the Basic Web Utility when the Win-CGI environment is detected and should never be CALLed directly.)

Program	Description	Syntax
Utcnum.wbb	Convert Formatted Numeric Text String to a Number	call "utcnum.wbb",text$,value
Utcprop.wbb	Convert a Text String to Proper Case	call "utcprop.wbb",text$
Utcstr.wbb	Unmask a String, Based on a Mask, and Return an Internal Value	call "utcstr.wbb",text$,mask$,result$
Utencode.wbb	URL Encode and Decode a Text Value	call "utencode.wbb",decode,text$,result$
Utentity.wbb	Convert HTML Markup Entities to Browser-Displayable Format	call "utentity.wbb",text$
Utenv.wbb	Get Environment Variable	call "utenv.wbb",name$,value$
Uterr.wbb	Generic Error Display Routine	call "uterr.wbb",errnum,linenum,progname$
Utexit.wbb	Clean Up Basic Web Utility Work Files in the Win-CGI Environment	call "utexit.wbb",cgi$
Utfrmgen.wbb	Generate Form Input Tags from a Template and an Optional List of Fields and Parameters	call "utfrmgen.wbb",tpl$,flds$,captions$,flags$,captags$,work$
Utfrmgn2.wbb	Generate a Complete HTML Form from a Template	call "utfrmgn2.wbb",tpl$,flds$, captions$,flags$,captags$, actionval$, submitval$, resetval$, placement,work$
Utfrmin.wbb	Copy CGI Input to a Data Template	call "utfrmin.wbb",cgi$,tpl$
Utfrmout.wbb	Merge Template Data Into HTML Form Output	call "utfrmout.wbb",tpl$,text$,work$
Uthtmfil.wbb	Generate HTML List from a File, Given a Key Range and Format Definition	call "uthtmfil.wbb", chan, first$, last$, keynum, maxrec, count, curkey$, tpl$, text$, work$, linkexpr$
Uthtmgen.wbb	Generate HTML Tags and Text from a Template	call "uthtmgen.wbb",tpl$, flds$, captions$, flags$, captags$, linkexprs$, work$

Program	Description	Syntax
Uthtmkey.wbb	Generate HTML List from a File, Given a List of Keys	call "uthtmkey.wbb",chan,keys$,keylen,tpl$, text$,work$,linkexpr$
Utfrmout.wbb	Merge HTML Text with Data from a Data Template	call "utfrmout.wbb",tpl$,text$,work$
Uthtmsel.wbb	Generate HTML List from a BBx or PRO/5 Select Verb	call "uthtmsel.wbb",fl$, where$, sortby$, opt$, maxrec, skip, count, tpl$,text$,work$,linkexpr$
Utisip.wbb	Verify if the Remote Client Address Is in a List of Valid Addresses	call "utisip.wbb",env$,iplist$,valid
Utmeta.wbb	Scans Text For Special Substitutions	call "utmeta.wbb",tpl$, text$
Utmmoin.wbb	Convert Memo Field (text area tag) CGI Input to Blocked Text	call "utmmoin.wbb",cgitext$, blocked$,block
Utmmoout.wbb	Format Text Containing CR-LF Characters As HTML	call "utmmoout.wbb",textin$,textout$
Utmore.wbb	Create "More Records" Information, Either As a URL or As Hidden Form Tags	call "utmore.wbb",cgi$, flds$, moreurl$, morehidden$
Utselect.wbb	Create Select Where Clause from CGI Input Fields	call "utselect.wbb", cgi$, tpl$, where$, andor$
Utsend.wbb	Send Text Back to the Client Browser	call "utsend.wbb",text$
Utses.wbb	Manage Session Record	call "utses.wbb",mode,sesrec$,errmsg$
Utsub.wbb	Substitute Occurrences of Text with Replacement Text	call "utsub.wbb", text$, from$, to$
Uttable.wbb	Create HTML Table from an Array	call "uttable.wbb", caption$, options$, dat$[all], work$
Uttags.wbb	Append Text with Specified HTML Markup Tags to a HTML String	call "uttags.wbb", tags$, text$, html$

Program	Description	Syntax
Uttplbas.wbb	Load Data Template from Basis Data Dictionary	call "uttplbas.wbb", dict$, fl$, control$, tpl$, errmsg$
Uttempfl.wbb	Create and Open a Temporary String File	call "uttempfl.wbb", tempfile$, tempchan
Uttplcp.wbb	Copy Matching Values from Source to Destination Templates	call "uttplcp.wbb",source$, dest$
Utwatch.wbb	Interface with a Shared Directory CGI Request Process	run "utwatch.wbb"

Toolkit Program Functional Listing

CGI Processing Tools

Program	Description	Syntax
Utcgi.wbb	Set Template Variables Based on the Operating System Environment and CGI Input Stream	call "utcgi.wbb",env$,cgi$,errmsg$
Utsend.wbb	Send Text Back to the Client Browser	call "utsend.wbb",text$
Uterr.wbb	Generic Error Display Routine	call "uterr.wbb",errnum,linenum, progname$
Utexit.wbb	Clean Up Basic Web Utility Work Files in the Win-CGI Environment	call "utexit.wbb",cgi$
Utwatch.wbb	Interface with a Shared Directory CGI Request Process	run "utwatch.wbb"

Data Merging Tools

Program	Description	Syntax
Uthtmout.wbb	Merge HTML Text with Data from a Data Template	call "utfrmout.wbb",tpl$,text$,work$
Utfrmout.wbb	Merge Template Data Into HTML Form Output	call "utfrmout.wbb",tpl$,text$,work$

File Listing Tools

Program	Description	Syntax
Uthtmfil.wbb	Generate HTML List from a File, Given a Key Range and Format Definition	call "uthtmfil.wbb", chan, first$, last$, keynum, maxrec, count, curkey$, tpl$, text$, work$, linkexpr$
Uthtmkey.wbb	Generate HTML List from a File, Given a List of Keys	all "uthtmkey.wbb",chan,keys$,keylen,tpl$, text$,work$,linkexpr$
Uthtmsel.wbb	Generate HTML List from a BBx or PRO/5 Select Verb	call "uthtmsel.wbb",fl$, where$, sortby$, opt$, maxrec, skip, count, tpl$,text$,work$,linkexpr$
Utselect.wbb	Create Select Where Clause from CGI Input Fields	call "utselect.wbb", cgi$, tpl$, where$, andor$

Form and HTML Creation and Capture Tools

Program	Description	Syntax
Utfrmgen.wbb	Generate Form Input Tags from a Template and an Optional List of Fields and Parameters	call "utfrmgen.wbb",tpl$,flds$,captions$,flags$,captags$,work$
Utfrmgn2.wbb	Generate a Complete HTML Form from a Template	call "utfrmgn2.wbb",tpl$,flds$, captions$,flags$,captags$, actionval$, submitval$, resetval$, placement,work$
Utfrmin.wbb	Copy CGI Input to a Data Template	call "utfrmin.wbb",cgi$,tpl$
Uthtmgen.wbb	Generate HTML Tags and Text from a Template	call "uthtmgen.wbb",tpl$, flds$, captions$, flags$, captags$, linkexprs$, work$

Other CGI Tools

Program	Description	Syntax
Utencode.wbb	URL Encode and Decode a Text Value	call "utencode.wbb",decode,text$,result$
Utentity.wbb	Convert HTML Markup Entities to Browser-Displayable Format	call "utentity.wbb",text$
Utmeta.wbb	Scans Text For Special Substitutions	call "utmeta.wbb",tpl$, text$
Utmore.wbb	Create "More Records" Information, Either As a URL or As Hidden Form Tags	call "utmore.wbb",cgi$, flds$, moreurl$, morehidden$
Utses.wbb	Manage Session Record	call "utses.wbb",mode,sesrec$,errmsg$
Utsub.wbb	Substitute Occurrences of Text with Replacement Text	call "utsub.wbb", text$, from$, to$
Uttable.wbb	Create HTML Table from an Array	call "uttable.wbb", caption$, options$, dat$[all], work$
Uttags.wbb	Append Text with Specified HTML Markup Tags to a HTML String	call "uttags.wbb", tags$, text$, html$

Template Tools

Program	Description	Syntax
Uttplbas.wbb	Load Data Template from Basis Data Dictionary	call "uttplbas.wbb", dict$, fl$, control$, tpl$, errmsg$
Uttplcp.wbb	Copy Matching Values from Source to Destination Templates	call "uttplcp.wbb",source$, dest$

Conversion Tools

Program	Description	Syntax
Utcdate.wbb	Convert Text Date to Internal Julian Integer or Date/Time Number	call "utcdate.wbb",strdate$,juldate
Utcdtf.wbb	Convert Typical and OEM Text Date Formats to/from Julian Date	call "utcdtf.wbb",tojul,format$,text$,juldate
Utcnum.wbb	Convert Formatted Numeric Text String to a Number	call "utcnum.wbb",text$,value
Utcprop.wbb	Convert a Text String to Proper Case	call "utcprop.wbb",text$
Utcstr.wbb	Unmask a String, Based on a Mask, and Return an Internal Value	call "utcstr.wbb",text$,mask$,result$

Memo Field Tools

Program	Description	Syntax
Utmmoin.wbb	Convert Memo Field (text area tag) CGI Input to Blocked Text	call "utmmoin.wbb",cgitext$,blocked$,block
Utmmoout.wbb	Format Text Containing CR-LF Characters As HTML	call "utmmoout.wbb",textin$,textout$

RS-232 Serial Connection Tools

Program	Description	Syntax
Rsread.wbb	Read a record by way of an RS-232 serial connection (UNIX only)	call "rsread.wbb",filename$,mode$,ky$,knum,rec$,errmsg$
Rsreadm.wbb	Read a record range by way of an RS-232 serial connection (UNIX only)	call "rsreadm.wbb",filename$,key1$,key2$,knum,ky$[all],rec$[all],count,errmsg$
Rswatch.wbb	Watch a RS-232 serial port on a target system (UNIX only)	rswatch.sh -d tty-device -s "stty parameters" -v

Other Tools

Program	Description	Syntax
Utaddr.wbb	ADDR low-level Basic Web Utility Routines	call "utaddr.wbb"
Utenv.wbb	Get Environment Variable	call "utenv.wbb",name$,value$
Utisip.wbb	Verify if the Remote Client Address Is in a List of Valid Addresses	call "utisip.wbb",env$,iplist$,valid
Uttempfl.wbb	Create and Open a Temporary String File	call "uttempfl.wbb", tempfile$, tempchan

rsread.wbb

Read a record by way of an RS-232 serial connection

Syntax
CALL "rsread.wbb",filename$,mode$,ky$,knum,rec$,errmsg$

This program communicates with a running "rswatch.wbb" task on another system. It scans the file for an available port to issue a request on. Each serial port has a corresponding "rswatch" task running on the target system. A library of available serial ports is maintained in the text file "rsttys.txt"

By using a dedicated serial connection between a live Business Basic system and a Web server system connected to the Internet, potential security issues of having a TCP/IP connection to the live system can be avoided. While a dedicated serial connection is slower and doesn’t support concurrency, it is secure.

filename$ is the name of the file on the target system to access. It can be a full pathname, or any name accessible to the task running rswatch.wbb on the target system.

- mode$ is the read mode used to access the desired record:
- n retrieves the key after that specified in ky$ (ky$ need not exist).
- p retrieves the key before that specified in ky$ (ky$ need not exist).
- any other value looks for ky$ specifically.

ky$ is the key to access, or a positioning value for the "n" and "p" modes. This returns the actual key of the record returned.

knum is the key chain number to use in a multi-keyed file. If the keys are not unique, the use of ky$ for repeated requests may return the same record. It may be necessary to use the "rsreadm.wbb" program to get a range of duplicate secondary keys.

rec$ returns the data record, with trailing 00 (hex 00) values removed.

errmsg$ returns an error message if an error occurs. An "Error 2" detects an end-of-file condition when using modes "n" and "p".

rsreadm.wbb

Read a record range by way of an RS-232 serial connection

Syntax
CALL "rsreadm.wbb",filename$,key1$,key2$,knum,ky$[all],rec$[all],count,errmsg$

This program communicates with a running "rswatch.wbb" task on another system and scans the file for an available port to issue a request on. Each serial port has a corresponding "rswatch" task running on the target system. A library of available serial ports is maintained in the text file "rsttys.txt".

By using a dedicated serial connection between a live Business Basic system and a Web server system connected to the Internet, it is possible to avoid potential security issues of having a TCT/IP connection to the live system. While a dedicated serial connection is slower and doesn't support concurrency, it is secure.

filename$ is the name of the file on the target system to access. It can be a full pathname, or any name accessible to the task running rswatch.wbb on the target system.

key1$ and key2$ specify the key range to read and return. All records from key1$+$00$ through key2$+$FF$ are included, so "001" for both would successfully return key values from "001001" through "001ZZZ".

knum is the secondary key chain to use if the target file is a multi-keyed file.

ky$[all] and rec$[all] are arrays that store returned keys and associated records. Values are stored in ky$[1..count] and rec$[1..count]. If count is 0, the the arrays may not be defined.

count contains the number of records returned in the ky$[] and rec$[] arrays, or 0 if no records were found.

errmsg$ returns an error message if an error occurred.

rswatch.wbb, rswatch.sh

Watch a RS-232 serial port on a target system

This program communicates with requests for records issued by CALLs to "rsread.wbb" and "rsreadm.wbb". Each rswatch task communicates through one serial port and uses one Business Basic user slot.

Syntax (UNIX)
rswatch.sh -d tty-device -s "stty parameters" -v

rswatch.sh may be run in background and started by UNIX at boot time by placing a startup script in the "/etc/rc" directory structure.

The tty device must be a disabled (logins are not allowed) tty device connected to the Web server system. If it does not start with "/dev/", this prefix is automatically added.

The stty parameters must be enclosed in quotes if any white space is included and are used to set the baud rate and other communication parameters needed to match the parameters on the Web server serial ports, as specified in the "rsttys.txt" file in the Basic Web Utility directory. The "raw" device mode for the stty command must be included.

The default setting if no "-s" option is specified is "9600 raw cs8 ixon ixoff -ixany".

The "-v" option, if specified, causes logging to take place for each transaction and error processed. This can be redirected to a log file running in background.

Note: The rswatch.sh script requires editing to correctly start BBx. Modify the values of lines beginning with "bbexec=", "bbcnf=", and "bbweb=" accordingly.

utaddr.wbb

ADDR low-level Basic Web Utility routines

Syntax
CALL "utaddr.wbb"

Many Basic Web Utility programs make repeated use of several low-level routines. By making those routines resident in memory (ADDR'd), processing performance is improved. CALL this routine once at the beginning of any session that uses Basic Web Utility programs.

utcdate.wbb

Convert text date to internal julian integer or date/time number.

Syntax
CALL "utcdate.wbb",strdate$,juldate

This low-level routine is used to convert a text string to a julian date value. The current Business Basic default date format is used to determine whether the format is month-day-year, or day-month-year, and the text string is parsed. In BBx and Pro5, the value of STBL("!DATE") is used for this analysis.

The following steps are performed:

- If strdate$ is blank, a julian number of 0 is returned.
- If strdate$ is "@", today's date and time are returned.

If a time is found at the end of strdate$, it is analyzed and converted to a fraction of a day (noon is .5, 6:00 pm is .75) to be added to the julian integer. The time must be in the format h:mm and may be followed by a word starting with "p" to force a "pm" assumption.

If possible, month names are replaced with month numbers.

strdate$ is tested for simple numeric dates, such as 030196 or 11301995, and converted to a julian value.

Finally, strdate$ is scanned for three numerics, separated by any non-numeric delimiter, such as 3/1/96 or 11-30-1995, and converted to a julian number.

- If no year is found, the current year is assumed.
- If the conversion cannot be performed, the juldate value is returned as 0.

utcdtf.wbb

Convert typical and OEM text date formats to/from julian date

Syntax
CALL "utcdtf.wbb",tojul,format$,text$,juldate

Many Business Basic applications store dates in a string format rather than a julian number. Common formats include fixed digits, such as YYMMDD, and packed decimal, requiring a special formula to unpack into the month, day, and year elements. This low-level routine is designed to convert various formats to and from julian values.

The legal values for format$ match those for date fields in data templates. See the Data Templates section for more information.

tojul is set to 0 to convert from juldate to text$, and 1 to convert from text$ to juldate.

format$ can be set to any of the following:

mdy MMDDYY
mdyy MMDDYYYY
ymd YYMMDD
yymd YYYYMMDD
dmy DDMMYY
dmyy DDMMYYYY
aon ADD+ON date format
soa State of the Art (MAS90) date format

text$ stores the stored text version of the date, and juldate stores the julian integer version of the date.

utcgi.wbb

Set template variables based on the operating system environment and CGI input stream

Syntax
CALL "utcgi.wbb",env$,cgi$,errmsg$

With the exception of utaddr.wbb, this is the first Business Basic CGI application program called. Once executed, the env$ and cgi$ string templates can be used to determine environment and CGI values.

The template env$ holds the system environment variables, many of which are used in CGI applications. For example, env.script_name$ contains the logical name of the executable script that started the BBx session, and env.remote_addr$ contains the IP address of the client browser that sent the request to the host server. In addition to creating env$ values for each environment variable, a global string (STBL on PRO/5) is created for each environment variable as well.

The cgi$ template holds the values of any input values set by the CGI input stream. These are sent to the CGI application in two ways:

The first is through the URL, where name=value pairs are present following a "?" character in the URL. For example, the URLwould set four values in the cgi$ string template:

"http://abc.com/cgi-bin/
runapp?state=CA&type=A+B&zip=&name=A%26P+Market"
The following identifies the cgi$ string template:
cgi.state$="CA"
cgi.type$="A B"
cgi.zip$=""
cgi.name$="A&P Market"

The second method is through an HTML form "post", where input form values are passed to the CGI input stream on the stdin file handle (though the Win-CGI specification passes values through a file).

In both methods, the data sent into the CGI application is URL-encoded, All nonprintable and some special characters are converted to hex notation, and spaces are replaced with "+" characters. utcgi.wbb decodes these values before placing them in the cgi$ template.

In the Win-CGI environment, large values are stored in temporary disk files. If any cgi$ variable value begins with a FF, the balance of the value contains a disk file name to store the value sent by the browser. This also makes it important to CALL "utexit.wbb" before exiting the Business Basic environment to remove any temporary files that may have been created.

Names used in both the env$ and cgi$ string templates are fixed to be valid variable names, if necessary, by replacing any nonletter, nondigit character with an underscore, and by trimming long names to 32 characters. Sequences of more than one underscore are changed to a single underscore. In addition, any names that do not start with a letter are prefixed with an "X_".

If any CGI input value is in the format name-n, then an array element is created in cgi$. All high-level routines understand arrays, and the format name-n, when moving data to and from the CGI environment. For example, if a CGI input stream name is "keywords-1", the cgi$ string template variable would be referenced as cgi.keywords$[1].

The global string "$arraysep" may be specified before calling utcgi.wbb to override the use of a single dash "-" as the element delimiter. For example, setting STBL("$arraysep","__") causes the name "keywords__1" to be treated as described above. This is important to scripting languages, such as Javascript, that cannot work with elements named with dashes.

This program stores two global strings for use by another program or application, if necessary: $cgi stores the cgi$ string, and $cgitpl stores the template definition. To recreate cgi$:

```
dim cgi$:stbl("$cgitpl")
cgi$=stbl("$cgi")
```

File Uploading

Forms that have been specified as "method=post enctype=multipart/form-data" are handled by utcgi.wbb. Any field types of "file" are stored in a temporary file, and the file name is stored in the cgi$ field. For example, if a form contains a file field named "datafile", a text field named "name", and the user filled in "c:\files\customers.dat" for the datafile field, then cgi$ might look like this:

```
cgi.name$="xyz"
cgi.datafile$="/tmp/bw123999.dat"
```

The extension of the uploaded filename is retained, but the name is changed to guarantee its uniqueness. The original file name is stored in a global string (STBL) $filename-fieldname, so the above example would set stbl("$filename-datafile") to "c:\files\customers.dat". See the uttempfl.wbb information for a description of where temporary files are stored.

utcgiwin.wbb

Win-CGI support

This program is used internally by the Basic Web Utility when the Win-CGI environment is detected and should never be CALLed directly.

utcnum.wbb

Convert formatted numeric text string to a number.

Syntax
CALL "utcnum.wbb",text$,value

This low-level routine converts a text string to a number, ignoring currency symbols and other nonnumeric characters. In PRO/5, it is also sensitive to the OPTS byte 6 position for the decimal character.

The characters "(" and "-" are both interpreted to indicate that the number is negative.

text$ contains the text to be converted, and value returns the numeric value, or 0 if the conversion fails.

utcprop.wbb

Convert a text string to proper case.

Syntax
CALL "utcprop.wbb",text$

This routine is used by various high-level Basic Web Utility programs when a user attribute "case=proper" is specified in a string template.

text$ contains the text to be reformatted and returns the formatted text.

utcstr.wbb

Unmask a string, based on a mask, and return an internal value.

Syntax
CALL "utcstr.wbb",text$,mask$,result$

This program returns a value suitable for reformatting with the same mask, using the STR() function. Business Basic developers often store formatted text values without any formatting, and then display or print formatted versions using the STR() function. For example, a US zip code stored as "957625555" could be reformatted as "95762-5555" with the mask "00000-0000". This low-level routine examines a formatted text$ string and returns the unformatted result$ text string by comparing characters in text$ to the format specification in mask$.

The Basic Web Utility high-level programs use this routine to convert formatted CGI input when a template specifies a nonnumeric data type and a user attribute of "mask=mask".

utencode.wbb

URL encode and decode a text value.

Syntax
CALL "utencode.wbb",decode,text$,result$

The CGI specification requires that certain characters be specially coded to avoid ambiguous usage. This low-level routine may be used to both encode and decode text based on the CGI requirements.

decode is set to 0 to encode text$, returning the result in result$

decode is set to 1 to decode a previously encoded text$, returning the result in result$.

utentity.wbb

Convert HTML markup entities to browser-displayable format.

Syntax
CALL "utentity.wbb",text$

When sending text to a client browser, it may be necessary to include characters that the browser would normally interpret as HTML markup characters but should be displayed as they are stored. Examples include "<", ">", and "&". This routine converts occurrences of these characters to the proper entity markup. For example, the "<" characters are converted to "<".

This routine is called automatically for all data elements by the high-level Basic Web Utility programs, unless the user-defined template attribute "passthru=y" is specified.

utenv.wbb

Get environment variable

Syntax
CALL "utenv.wbb",name$,value$

This low-level routine can be used to access an operating system environment variable. It can be used whether or not utcgi.wbb has been called.

name$ is a case-insensitive environment variable name.

value$ returns the value of the environment variable.

uterr.wbb

Generic error display routine

Syntax
CALL "uterr.wbb",errnum,linenum,progname$

Handling unexpected errors in CGI applications is different from terminal-based applications because there is no direct channel to the end-user. This routine provides an simple method of notifying the user of a problem. Typically, after CALLing this routine, the program exits Business Basic. To call this in PRO/5 use:
CALL

"uterr.wbb",err,tcb(5),pgm(-2).

The routine generates a simple HTML page, displaying a heading and error specifics. The heading displayed for specific error codes can be controlled by creating global string values called "$errdesc-n". For example, in PRO/5, the following creates a valid message for a missing file error:

dummy$=stbl("$errdesc-12","A missing file error occurred!")

In addition to displaying an HTML page, uterr.wbb also attempts to mail an administrator user a message about the error. To do this, the global string value "$mailerror" should be set to the email address of the administrator.With a host running UNIX, this feature opens a pipe to the UNIX "mail" command and sends a message detailing the error.

utexit.wbb

Clean up Basic Web Utility work files in the Win-CGI environment.

Syntax
CALL "utexit.wbb",cgi$

When the Basic Web Utility operates in a Win-CGI environment, it may create work files to store large CGI input values. Before exiting, these work files should be erased. This routine examines the CGI string template produced by utcgi.wbb and erases any files. It should be CALLed before exiting the Business Basic environment in any Win-CGI installation.

utfrmgen.wbb

Generate form input tags from a template and an optional list of fields and parameters

Syntax
CALL "utfrmgen.wbb",tpl$,flds$,captions$,flags$,captags$,work$

This high-level program generates the input tags for an HTML form (or part of a form), based on a template and other information. It program is also capable of creating the form as loose text, preformatted and aligned text, or as a bordered or borderless table.

tpl$ is a data tempate that contains both the fields and data to generate the form input fields. A variety of user-attributes can be defined in the template to control how field data is handled. See the Data Templates information for an explanation of these attributes.

flds$ is a text string that contains a comma-delimited list of field names and optional format options. If flds$ is null, then a default list is generated from all the fields in tpl$. flds$ can refer to individual array elements (name-n) or to all array elements (name-*), in which case the form is generated with all defined array elements separated by a <BR> tag within the column. If flds$ begins with "*,", it is assumed to contain a list of exceptions, so that all the fields in the template tpl$ are used to generate the HTML output. Those found in flds$ are referenced with the formatting tags included in flds$ (for example, if flds$ contained the data "*,type checkbox keys="1;2" vals="Type 1;Type 2"", then all fields in the template would be generated, and the field "type" would be treated as a checkbox input.) See the utfrmout.wbb program documentation for information about formatting options.

Any "field" that begins with "<" is assumed to be fixed HTML that is added to the document generated. If a table format is being generated, the field is allocated a full row, using "<td colspan=2>" when creating that particular row.

If flds$ begins with "!,", then all fields in the template except those listed after the first comma are included in the generated document.

captions$ is a string template that contains captions for any field to be included in the form (any in flds$, or if flds$ is null, then any field in tpl$.) The data for any field found in captions$ is used as the caption for the field. If a field to be used on the form is not present in captions$, and the user attribute "caption" is not present in the template, a default caption is generated from the field name by converting underscores to spaces and formatting the name with proper case. A null field in captions$ results in no caption for that field.

flags$ is a text string containing various formatting controls, each separated by at least one space, in any order. The supported flags include:

table	Formats the captions and input fields in table columns, one row per field.
pre	Use pre-format tags to format the form, allowing perfect column alignment without relying on table structures but using fixed pitch fonts.
<p>	Indicates there should be extra space between each row.
align=left, center, right	Sets horizontal alignment for table captions.
cellalign=left, center, right	Sets the horizontal alignment for table data cells.
valign=top, bottom	Sets vertical alignment to "top" or "bottom" for tables.
border border=n	For table forms, there should be a border around each cell.
hdropt=options cellopt=options	Adds options to the <th> and <td> tags, respectively. No spaces are allowed, but underscores can be used for multiple options. "hdropt=bgcolor=red_align=right", for example, generates <th bgcolor=red align=right>.
font=fontopts hdrfont=fontopts	Adds a tag to each data cell and caption cell, respectively. Use underscores for spaces. For Example, "size=4_color=black" adds and tags to the data.
right	Captions are placed to the right of the input fields.

top	Captions are placed above the input fields. In addition, if "pre" or "table" is specified, the data is arranged in columns, and array values in the template are scrolled within the column.

captags$ is a text string that contains any tag used to format the captions before being placing in HTML form. This string is used in a CALL to uttags.wbb. Refer to that program page for more information.

work$ is a text string that returns the HTML version of the form. This form is incomplete as returned and needs a submit button and the <form> </form> HTML tags. It may be necessary to use this feature to build a form from several data templates.

The following code creates a simple form:

```
CALL "utcgi.wbb",env$,cgi$,errmsg$

rem - generate heading

CALL "uttags.wbb","h1","Customer Update Form",html$

rem - create template for new customer

dim rec$:"id:c(5), name:c(40), street:c(40), city:c(30), state:c(2):case=upper:,
zip:c(9):mask=00000-0000:"

rem - if existing customer, the rec$ template could be filled here

rem - create form fields in table format - note ID is a hidden field and can’t be
changed

CALL "utfrmgen.wbb",rec$,"id hidden,name,street,city,state,zip","","table
border","",formhtml$

rem - add submit button
```

```
CALL "uttags.wbb","submit","",formhtml$

rem - add form tags to form, append to html$; script to perform update is "/cgi-bin/
custupdt"

CALL "uttags.wbb","form /cgi-bin/custupdt",formhtml$,html$

rem - send out form in html$ to browser

CALL "utsend.wbb",html$

CALL "utexit.wbb",cgi$
```

utfrmgn2.wbb

Generate a complete HTML form from a template

Syntax
CALL "utfrmgn2.wbb",tpl$,flds$,captions$,flags$,captags$, actionval$, submitval$, resetval$, placement,work$

This program uses the utfrmgen.wbb program to create a form and adds the submit and reset buttons and form action tags to create a complete HTML input form.

For the tpl$, flds$, captions$,flags$, captags$, and work$ variables, refer to the "utfrmgen.wbb" documentation.

actionval$ contains the name of the script to execute when the submit button is pressed. All forms contain a tag similar to <form method="post" action="actionname">. The text in actionval$ is used for actionname.

submitval$ contains the caption used on the submit button(s). If this is null, the browser places its own caption on the button.

resetval$ contains the caption used on the reset button(s). If this is null, no reset button is created on the form.

placement is used to determine where to place the submit and reset buttons. The following values are valid:

1 = Below form
2 = Above form
3 = Both above and below form

Add 100 to these values for a horizontal rule and to separate the buttons from the form body.

If utfrmgn2.wbb recognizes any field types of "type=file", the <form> tag is created with the enctype=multipart/form-data option to support file uploading. utcgi.wbb is compatible with this attribute, but only modern browsers support it (i.e., Netscape Navigator 3.0 or above, Microsoft Internet Explorer 3.0 or above.)

utfrmin.wbb

Copy CGI input to a data template

Syntax
CALL "utfrmin.wbb",cgi$,tpl$

This is a high-level program to copy data from the CGI input template to a data template. It is sensitive to the user-defined format attributes for defining date, number, and string formats. This is typically used to copy data into a data template for storage in a file from either a form being updated, or from a URL that contains CGI input fields.

cgi$ is the string template generated by utcgi.wbb.

tpl$ is a data template that can incorporate user-defined format attributes. For more information, see the Data Templates section.

utfrmout.wbb

Merge template data into HTML form output

Syntax
CALL "utfrmout.wbb",tpl$,text$,work$

This high-level program merges BBx data with HTML text and produces a result in work$. The intent is to produce an HTML form with the default handling of data fields as input fields. It is sensitive to the user-defined format attributes in the data template tpl$, as well as format tags in the text$ template. The template attributes are discussed in the Data Templates section.

The HTML text string text$ may contain any text, meta instruction, or field tag reference. It is evaluated and copied, with possible substitutions and insertions, into work$.

Meta Instructions

{include filename} - loads the text file filename into text$. This method creates HTML template files and incorporates them into an application. filename must be accessible to Business Basic through a physical path or prefix search.

{if datafield opr value} ... {end} - evaluates the expression datafield opr value. If it fails, it suppresses any text between the if and end tags. If the expression is valid, the tags are removed, but the text between them is retained.

datafield can be either a field in the data template or a global string variable name. The operator opr can be >, <, =, >=, <=, <>, in, or !in. The "in" and "!in" operators ("in" or "not in") perform position checks on text fields and values.

If datafield is numeric in the template, the value must be a simple number. If datafield is defined with a user attribute of "date=format", the value should be a text date, such as "11/30/95". {if}{end} tags may be nested.

If datafield is not found in the data template and is not a global string variable, the meta instruction is retained in the text.

Note that datafield should not be enclosed by brackets, and there must be at least one space between datafield and opr, and opr and value.

Field tags

Field tags are placed in text$ in the format [dataname type options].

type is optional, and if not specified, defaults to "text". If dataname is not found in the data template tpl$, and a global string variable is found by that name, it is used as simple text output rather than input.

type can be any of the following words: text, hidden, password, radio, checkbox, memo, list, mlist, show, image, or encode. These are inserted as form input fields in the following formats: text boxes, hidden fields, password input boxes, radio button group, checkbox group, textarea entry, listbox, multi-selection list box, display-only, image tags, and URL-encoded display-only, respectively. URL-encoded display-only format is useful if the insertion is being placed in the middle of a URL link.

The "show" type provides display-only fields in the form.

Radio, checkbox, and list boxes produce groups of selections based on the "keys", "vals", and "sep" options.

Note this regarding image types: unlike uthtmout.wbb, this program does not look for the "image=y" user attribute.

Therefore, by default, a form displays the field as a text entry box for maintenance of the data contents. The global string "$imagelib" may be used to specify the physical path to the image files and is prepended to the data from the template to find the image file and calculate pixel dimensions for ".gif" files. Also, the global string "$imageurl" is prepended to the image src tag: <image src=" + STBL("$imageurl") + data-value + ">"options may include:

keys="item1;item2;...;itemn"
vals="desc1;desc2;...;descn"
sep="char" or hex
cols=columns

rows=rows
alt="alternate image description"
wrap=value

The "sep" option defines the separator character in "keys" and "vals". By default, it is a semicolon but may be set to any value, including nonprintable values, except a quote.

The options are used in different ways by the different field input types.

For radio and checkbox groups, "keys" generates the returned value for each group item, and "vals" is used as a caption for each item. In addition, if columns is less than 2, items are positioned vertically. If columns is between 2 and 98, items are placed in a table of the specified number of columns across. If columns is over 98, items are placed horizontally, and the browser breaks the lines in an unpredictable manner.

For list and mlist groups, keys and vals are combined to form each listbox item in the format of "itemn - descn". In addition, if rows is specified, then the list box is defined as the specified number of rows high.

For memo fields, columns and rows is used to define the textarea dimensions. If unspecified, then 60 columns and 15 rows is assumed. Also, the wrap=value adds a wrap option to the textarea tags.

For image tag displays, the alt= option can be used to specify the alternate description browsers use if the image cannot be displayed.

uthtmfil.wbb

Generate HTML list from a file, given a key range and format definition

Syntax
CALL "uthtmfil.wbb", chan, first$, last$, keynum, maxrec, count, curkey$, tpl$, text$, work$, linkexpr$

This high-level program simplifies the process of producing an HTML listing of records from a single file, using traditional Business Basic commands to read the file channel for a specified key range, supporting multi-keyed files throughtheir key chain numbers, and supporting a maximum record count, so that the resulting HTML page size can be controlled.

chan is the channel that the file to be read is opened on and must be opened before CALLing this program.

first$ and last$ are text strings that indicate the key range of records to process. In particular, if the user is to "scroll" through the file, first$ should be set to the value of curkey$ from the last page scrolled through. The program processes all records from first$ forward (whether or not first$ exists as a key in the file) until a record is read with a key greater than last$ + FF. If first$ or last$ are null, the records are processed from the first through the last records, respectively. first$ and last$ apply to the key chain specified in keynum.

keynum is the key chain number used when processing the file.

maxrec indicates the maximum number of records to include in the HTML output.

count returns the actual number of records included in the HTML output.

curkey$ is returned as null if the end of the file is reached. Otherwise, it contains the value of the key after the last one included in the HTML output. This variable can be used to indicate a starting key value (first$) for the next page in a "scrolling" type of application. Typically, it must be URL encoded before including it in a "more records" URL to continued scrolling. URL encoding is performed by utencode.wbb.

tpl$ is a data template used to read records from the file indicated by chan.

text$ is a string variable that contains the HTML format for each record, along with embedded data name tags, so that a list format or paragraph breaks are generated between records. For each record, the program "uthtmout.wbb" is CALLed, using this as the format text. See the uthtmout.wbb information for more details.

work$ returns the HTML text for the records. The global string $list also stores this value and can be used in CALLs to uthtmout.wbb, which can use text containing [$list] to merge the value of work$ automatically.

linkexpr$ is a text string used by "uthtmout.wbb" to generate any href links from the records to another page. See the uthtmout.wbb information for more details.

Automatic pagination support

If the first$ argument is null, the cgi$ variable bbweb_s is checked, and, if present, is used as the starting point for the list. On exit, if more records are available, the program generates a global string (STBL) $moreurl that contains the full URL, with any cgi$ fields retained and with bbweb_s incremented for the next page. This can be used in a hyperlink for a continuation:

```
{if $moreurl > ""}
<a href="[$moreurl]">More records&amp;ldots;</a>
{end}
```

uthtmgen.wbb

Generate HTML tags and text from a template

Syntax
CALL "uthtmgen.wbb",tpl$, flds$, captions$, flags$, captags$, linkexprs$, work$

This high-level program generates a data page in HTML format, based on a template and other information. It is capable of creating data as loose text, preformatted and aligned text, or as a bordered or borderless table.

tpl$ is a data tempate that contains both the fields and data to generate the didsplay fields. Various user attributes can be defined in the template to control how field data is handled. See the Data Templates information for a discussion of these attributes.

flds$ is a text string that contains a comma-delimited list of field names and optional format options. If flds$ is null, a default list is generated from all the fields in tpl$. flds$ can refer to individual array elements (name-n), or it can refer to all array elements (name-*), in which case the form is generated with all defined array elements separated by a <BR> tag within the column. If flds$ begins with "*,", it is presumed to contain a list of exceptions, so that all the fields in the template tpl$ are used to generate the HTML output. Those found in flds$ are referenced with the formatting tags included in flds$ For example, if flds$ contained the data "*,giffile @image", then all fields in the template would be generated, and the field "giffile" would be treated as an image reference. If flds$ begins with "!,", then all fields in the template, except those listed after the first comma, are included in the generated document. See the uthtmout.wbb information for formatting options.

captions$ is a string template that can contain captions for any field to be included in the form. Specifically, any in flds$, or if flds$ is null, then any field in tpl$.The data for any field found in captions$ is used as the caption for the field. If a field to be used on the form is not present in captions$, and a "caption" user attribute is not present in the template string, a default caption is generated from the field name by converting underscores to spaces and formatting the name with the proper case.

Note that a null field in captions$ results in no caption for that field.flags$ is a text string containing various formatting controls in any order. The flags supported include:

table	Formats the captions and input fields in table columns, one row per field.
tre	Use pre-format tags to format the form, allowing perfect column alignment without relying on table structures but using fixed pitch fonts.
<p>	Indicates there should be extra space between each row.
align=value cellalign=value	For tables, sets horizontal alignment of the caption or cell to value, typically left or right.
valign=value	For tables, sets vertical alignment to value, such as top or bottom.
font=value hdrfont=value	Add and tags to the text in cells and captions, respectively. Because there can be no spaces in value, use underscores for multiple options. For example: font=size=4_color=blue.
cellopt=value hdropt=value	When the table option is used, add value to the end of the <td> and <th> tags, respectively. No spaces are allowed. For multiple options, these are separated with an underscore (see above.)
border border=n	For table forms, there should be a border around each cell.
right	Captions are placed to the right of the input fields.
top	Captions are placed above the input fields. In addition, if the "pre" or "table" is specified, the data is arranged in columns, and array values in the template are scrolled within the column.

The text string captags$ contains any tag used to format the captions before placing them in the HTML form. This string is used in a CALL to uttags.wbb. Refer to that program page for more information.

linkexpr$ may contain one or more link definitions to use if any data field contains the @link lead-in option. If multiple link expressions are contained in linkexpr$, they must be separated by an ASCII character 1 - 01. An example of a link expression links a record in a list to a full-page display of that particular record. Typically, the full-page display is based on the record's key field. Here is an example, assuming there is a script that will be given the records key through the ID field:

linkexpr$="/cgi-bin/showpage?ID=[ID @encode]"

Note that uthtmout.wbb is CALLed recursively to format the actual URL used in the link, so the same formatting

information applies to text$ and linkexpr$.

work$ is a text string that returns the HTML document with captions and data fields.

uthtmkey.wbb

Generate HTML list from a file, given a list of keys

Syntax
CALL "uthtmkey.wbb",chan,keys$,keylen,tpl$,text$,work$,linkexpr$

This high-level program simplifies the process of producing an HTML listing of records from a single file, using a predefined list of keys that can be iterated with a specified key length. The CALLing program builds the list of primary keys and CALLs this program to create HTML for each record specified in that list.

chan is the channel that the file to be READ is opened on must be opened before CALLing this program.

keys$ is a string variable that contains the list of keys to process. Each key must be the same length, as indicated in the keylen variable.

keylen indicates the length of each key in keys$

tpl$ is a data template to read records from the file indicated by chan.

text$ is a string variable that contains the HTML format for each record, along with embedded data name tags. For each record, the program "uthtmout.wbb" is CALLed, using this as the format text. See the uthtmout.wbb information for more details.

work$ returns the HTML text for the records.

linkexpr$ is a text string used by "uthtmout.wbb" to generate any href links from the records to another page. See the uthtmout.wbb information for more details.

uthtmout.wbb

Merge HTML text with data from a data template

Syntax
CALL "uthtmout.wbb",tpl$,text$,work$,linkexpr$

This program is a high-level routine CALLed by uthtmfil.wbb, uthtmkey.wbb, and uthtmsel.wbb. It can also be CALLed by custom programs when single-file processing is inadequate. It merges Business Basic data with HTML text and produces results in work$. The intent is to produce a standard HTML page, so no input fields are generated as with an input form. If an input form is desired, utfrmout.wbb is used.

The program is sensitive to the user-defined format attributes in the data template tpl$, as well as format tags in the text$ template. The template attributes are discussed in the Data Templates section. The data template specified can be filled by the CALLing program using data from a number of sources. In applications where multiple data templates do not share data field names, this program can be CALLed multiple times to produce a final HTML output, with different data merged on each CALL.

tpl$ is a data template used as the source for data field names. It contains data types and user-defined formatting attributes. See the Data Templates section for more information.

text$ is an HTML text string that may contain any text, meta instruction, or field tag reference. It is evaluated and copied, with possible substitutions and insertions, into work$.

work$ returns the HTML result of merging text$ with data in tpl$.

linkexpr$ may contain one or more link definitions to be used if any data field contains the @link lead-in option. If multiple link expressions are contained in linkexpr$, they must be separated by an ASCII character 1 - 01. An example of a use for a link expression links a record in a list to a full-page display of that particular record. Typically, the full-page display is based on the record's key field. The following example assumes there is a script that will be given the records key through the ID field:

linkexpr$="/cgi-bin/showpage?ID=[@encode ID]"

If any link expression contains an ASCII 2 (02) character, the data before the 02 is used as the "href" portion of the link, and data after the 02 is added to the <a ...> tag after the "href=" element. This is helpful when specifying things such as target frames in a link. For example, if the link expression is "/cgi-bin/showpage?id=1"+02+"target=A", the generated tag would be "...".

Note that uthtmout.wbb is CALLed recursively to format the actual URL used in the link, so the same formatting information applies to text$ and linkexpr$.

Meta Instructions

{include filename} - loads the text file filename into text$. This method creates HTML template files and incorporates them in an application. filename must be accessible to Business Basic.

{if datafield opr value} ... {end} - evaluates the expression datafield opr value. If it fails, any text between the if and end tags is suppressed. If the expression is valid, the tags are removed, but the text between them is retained. datafield can be either a field in the data template or a global string variable name. The operator opr can be >, <, =, >=, <=, <>, in, or !in. The "in" and "!in" operators perform position checks on text fields and values. If datafield is numeric in the template, then value must be a simple number. If datafield is defined with a user attribute of "date=format", then value should be a text date, such as "11/30/95". {if}{end} tags may be nested.

If datafield is not found in the data template and is not a global string variable, the meta instruction is retained in the text.

Note that datafield should not be enclosed by brackets, and there must be at least one space between datafield and opr, and opr and value.

Field tags

Field tags are placed in text$ in the format [dataname format-control options].

dataname is a data template field name, or a global string variable name. If it is not found in either form, then it is retained for subsequent CALLs with other data templates.

format-control is an optional format control word used to indicate special formatting of the merged data. These values can optionally be placed before the dataname for compatibility with earlier releases. Valid values are:

@link or @linkn, used to create an "data-value expression from the dataname value. The format of the url-value is specified in the linkexpr$ variable. If multiple link formats are specified in linkexpr$, the format @linkn can be used, where n specifies the link format number to use with this dataname.

@encode forces the dataname value to be URL encoded.

@image causes an <img src="data-value"> tag to be generated from the dataname value. If the global string variable "$imageurl" is defined, it is used as a prefix to the dataname value. In addition, if the global string variable "$imagelib" is defined, it is used to locate the physical image file, if it resides on the host system, and determine the image dimensions for the <IMG> tag.

@pad ensures that a right padded, rather than trimmed dataname value is used.

@lpad ensures that a left padded, rather than trimmed dataname value is used.

Padding is only necessary on pre-formatted output (such as between <pre> and </pre> tags.)

options may include:

keys="item1;item2;...;itemn"
vals="desc1;desc2;...;descn"
sep="char" or hex
alt="image-altname"
passthru=y or n

The "sep" option is used to define the separator character used in "keys" and "vals". By default, it is a semicolon, but may be set to any value, including nonprintable values, except a quote.

If keys and vals are specified, then the dataname value is compared to the list of item values, and the corresponding desc value is merged, rather than the dataname value itself.

If the @image lead-in option is specified, the image-altname is used to specify the "alt=name" in the HTML image tag. The default name is "image".

Normally, any dataname value that comes from the data template is modified for HTML markup entities. If passthru=y is specified, the utentity.wbb routine is not CALLed, allowing HTML text to be stored in the data template. The "passthru" user-defined attribute in the data template is overridden by any value specified in the options here.

uthtmsel.wbb

Generate HTML list from a BBx or PRO/5 SELECT verb

Syntax
CALL "uthtmsel.wbb",fl$, where$, sortby$, opt$, maxrec, skip, count, tpl$,text$,work$,linkexpr$

This high-level program simplifies the process of producing an HTML listing of records from a single file, using the BBx/Pro5 SELECT verb. It supports a maximum record count and skip record count to control the resulting HTML record set.

The text string fl$ contains the name of the file to issue the SELECT from.

The text string where$ contains the optional WHERE clause (without the word "WHERE") for use in the SELECT statement.

The text string sortby$ contains the optional SORTBY clause (without the word "SORTBY") for use in the SELECT statement.

The text string opt$ is used in the SELECT statement's MODE="opt" clause. A common use of opt$ would be to control the optimization performed by BBx or Pro5, such as "opt=nosort".

maxrec indicates the maximum number of records to include in the HTML output.

skip indicates the number of records to skip before including records in the HTML output. Because the SELECT statement does not provide a reliable means of starting a list at a specific point in the file, scrolling applications must know how far the previous page had read through the file. This variable is typically transferred in a "more records" URL. It is automatically incremented by the number of records read or returns 0 if the end of the SELECT is reached.

count returns the actual number of records included in the HTML output.

The data template tpl$ reads records from the file indicated by chan.

The string variable text$ contains the HTML format for each record, along with embedded data name tags. For each record, the program "uthtmout.wbb" is CALLed, using this as the format text. See the uthtmout.wbb information for more details.

work$ returns the HTML text for the records. The global string $list also contains this value.

The text string linkexpr$ is used by "uthtmout.wbb" to generate any href links from the records to another page. See the uthtmout.wbb information for more details.

Automatic pagination support

If the skip argument is null, the cgi$ variable bbweb_s is checked. If present, it is used as the starting point for the list. On exit, if more records are available, the program generates a global string (STBL) $moreurl that contains the full URL, with any cgi$ fields retained, and with bbweb_s incremented for the next page. This can be used in a hyperlink for a continuation:

```
{if $moreurl > ""}
<a href="[$moreurl]">More records&ldots;</a>
{end}
```

This feature assumes that the value of where$, sortby$, and opt$ will be duplicated between executions.

utisip.wbb

Verify if the remote client address is in a list of valid addresses

Syntax
CALL "utisip.wbb",env$,iplist$,valid

One method of implementing security in an Internet application is to verify that the client request appears to be coming from a valid IP address or domain. This low-level routine checks the validity and includes support for wildcards and multiple addresses.

The string template env$ is returned by utcgi.wbb.

iplist$ contains a semi-colon delimited list of valid IP addresses and/or domain names. The list may contain wildcards.

For example, "192.0.0.*" would return as valid any IP address that starts with "192.0.0." Another example: "localhost; *.acme.com" would allow any "localhost" access, plus any systems in the "acme.com" domain.

valid returns 1 if the client address is in iplist$, or 0 if not.

Not all Web servers return a domain name, and those that can are often configured not to. However, most servers provide the client IP address.

utmeta.wbb

Scans text for special substitutions

Syntax
CALL "utmeta.wbb",tpl$, text$

This program is CALLed by the uthtmout.wbb and utfrmout.wbb programs and can also be called directly. The purpose of this program is to allow easy file inclusion in text strings and to provide some conditional control over the content of HTML text without resorting to in-line Business Basic coding.

The data template tpl$ is used when evaluating conditional suppression. See the Data Templates section for more information.

The text string text$ contains the meta commands and also returns the result after substitutions are performed.

{include filename} - loads the text file filename into text$. This method creates HTML template files and incorporates them in an application. filename must be accessible to Business Basic.

{if datafield opr value} ... {end} - evaluates the expression datafield opr value, and if it fails, suppresses any text between the if and end tags. If the expression is valid, the tags are removed, but the text between them is retained.

datafield can be either a field in the data template or a global string variable name. The operator opr can be >, <, =, >=, <=, <>, in, or !in. The "in" and "!in" operators perform position checks on text fields and values. If datafield is numeric in the template, value must be a simple number. If datafield is defined with a user attribute of "date=format", value should be a text date, such as "11/30/95". {if}{end} tags may be nested. An example follows:

{if ytd_sales > 0} <td>Sales: [ytd_sales]</td> {end}

If datafield is not found in the data template and is not a global string variable, the meta instruction is retained in the text.

Note that datafield should not be enclosed in brackets, and there must be at least one space between datafield and opr, and opr and value.

utmmoin.wbb

Convert memo field (textarea tag) CGI input to blocked text

Syntax
CALL "utmmoin.wbb",cgitext$,blocked$,block

Business Basic applications typically store variable length text fields in multiple records, blocked to a certain size.

Often, the maintenance of these blocks is performed one line at a time within the Business Basic application itself.

This routine simplifies the conversion of free form text entry in an HTML form into a format suitable for storage using blocking techniques.

The string variable cgitext$ contains data from a <textarea> input tag in a HTML form. This information is sent to the server with CR-LF characters wherever the user pressed the Enter key while editing the data.

The string text blocked$ returns a version of the text passed in cgitext$, blocked based on the block size specified in block.

block indicates the block size to use when constructing blocked$

cgitext$ is analyzed for paragraph boundaries, and all other line breaks are suppressed. The paragraphs are word-wrapped on block boundaries and appended to the blocked$ variable. Paragraph breaks are indicated by blank line in blocked$.

utmmoout.wbb

Format text containing CR-LF characters as HTML

Syntax
CALL "utmmoout.wbb",textin$,textout$

Web browsers ignore white space when formatting HTML output. To force data output that contains CF-LF line breaks to retain the breaks, include <P> and <BR> tags in the HTML output. This low-level routine performs this function by analyzing textin$ and substituting the appropriate line- or paragraph-breaks.

The string variable textin$ contains the data with CR-LF line breaks.

textout$ returns a HTML version of the text with <P> and <BR> tags where appropriate.

This routine is not a mirror of "utmmoin.wbb".

utmore.wbb

Create "more records" information, either as a URL or as hidden form tags

Syntax
CALL "utmore.wbb",cgi$, flds$, moreurl$, morehidden$

When developing record scrolling applications, it may be necessary to provide a link or button to a subsequent set of records through a "more records" link. Often, this type of link only requires one or two fields to be passed to the subsequent task. This information can be easily created manually in Business Basic code. However, if many fields of information passed to the current task must be passed on to subsequent tasks, this routine can simplify the task of creating the HTML text required.

The string template cgi$ is generated by utcgi.wbb.

flds$ is an optional, comma-separated list of field names. If specified, only the field names specified are used to generate moreurl$ and morehidden$ from cgi$. If flds$ begins with "!,", then all fields in the template, except those listed after the first comma, are included in the generated document.

moreurl$ is returned as a text string that contains URL-encoded field=value pairs from the values stored in cgi$. For example, if cgi.state$="CA" and cgi.slsp$="100", then moreurl$ would contain "state=CA&slsp=100". This can then be appended to the end of a cgi link URL, such as "/cgi-bin/listrecs?state=CA&slsp=100".

morehidden$ is returned as a set of hidden field input tags, for inclusion in a HTML form. The above example would produce the following text:

<input type="hidden" name="state" value="CA">
<input type="hidden" name="slsp" value="100">

This can then be embedded in an HTML form, along with a submit button, to provide another version of a link to a subsequent list.

This routine is sensitive to the presence of two cgi$ variables, "bbweb_count" and "bbweb_skip". If bbweb_count is present, bbweb_skip is automatically incremented by the value of bbweb_count when added to moreurl$ and morehidden$.

utselect.wbb

Create SELECT WHERE clause from cgi input fields

Syntax
CALL "utselect.wbb", cgi$, tpl$, where$, andor$

This program simplifies the parsing of cgi input from an HTML query form. The query form would contain input fields for certain data fields, and once the user filled in and submitted the form, this program would create the WHERE clause of a SELECT statement based on the user entries. It is sensitive to user-defined formatting attributes in the data template.

The string template cgi$ is returned by utcgi.wbb.

The data template tpl$ is used in the SELECT statement and can include user-defined formatting attributes, as defined in the Data Template section.

where$ returns the WHERE clause, suitable for use in a SELECT statement, with the syntax "WHERE CPL(WHERE$)". The assumed data template name used in where$ is "rec": rec.state$="CA". For example: if "rec" is not the right name, a substitution should be performed before executing the SELECT statement.

andor$ specifies whether the AND or OR boolean is used between fields in where$. If this is not set to "or", then "and" is assumed.

Any field in cgi$ and tpl$ that isn't null in cgi$, is evaluated. The field name for the where clause expression fragment is taken from cgi$.

If a cgi$ field called "opr_name" is found, the where clause operator is taken from that field. Otherwise, the text of the cgi field itself is analyzed for an operator. Operators can be <, >, =, <=, >=, <>, in, like, and between. If there is no operator, but the data in cgi$ contains *, ?, or [characters, and the tpl$ definition for the field is character rather than numeric, the "like" operator (wildcard) is used. Otherwise, text fields must start with the characters entered, and numeric fields must be equal to the number entered.

If the operator is "between", there must be exactly two occurrences of the same field name, and the where clause will be formed as field >= first-value and field <= second-value.

If the same field occurs multiple times in cgi$ (as can happen with checkboxes, multiple selection lists, or intentionally created duplicate named tags), multiple where clause expressions are created with OR boolean logic (other than the between operator case noted above), distinct from the AND or OR booleans used between unique field names.

utsend.wbb

Send text back to the client browser

Syntax
CALL "utsend.wbb",text$

This high-level routine sends HTML text to the client. It works on all Basic Web Utility platforms, regardless of the output destination, and automatically adds the Content-type: header as needed to the first output.

On the first CALL to utsend.wbb, if text$ begins with "Location:", text$ is sent with a trailing blank line.

On the first CALL to utsend.wbb, if text$ begins with "Content-type: ", a header is not added by utsend.wbb, and the application is responsible for the header and trailing blank line. This enables the application to send any MIME data type to the browser.

utses.wbb

Manage session record

Syntax
CALL "utses.wbb",mode,sesrec$,errmsg$

This program provides an interface to read, write, and delete the session record, if present. Session tracking can be initiated in the program by creating a global string (STBL) $sestpl before CALLing utcgi.wbb. This string is a string template definition to describe what session data the Basic Web Utility should store. The Basic Web Utility generates an HTTP cookie ($sesid) to retain the session ID code that the data is stored under.

mode can be 0 to read the session record, 1 to write it, or 2 to delete it. If mode is 0, sesrec$ returns the session record If mode is 1, it is used to update the session record. It is ignored if mode is 2.

errmsg$ returns a description if any error occurred. If this value is not blank on exit, there was a problem in session tracking, and the application should take measures to display and/or work around the error.

This program uses the file utses.dat, stored in the Basic Web Utility directory and is created automatically if not found. It has a key size of 22 and a record size of 512.

utsub.wbb

Substitute occurrences of text with replacement text

Syntax
CALL "utsub.wbb", text$, from$, to$

This low-level routine substitutes all occurrences of from$ with to$ in text$. It is nonrecursive, so to$ may contain from$, or conversely, from$ may contain to$.

uttable.wbb

Create HTML table from an array

Syntax
CALL "uttable.wbb", caption$, options$, dat$[all], work$

HTML tables are time consuming to create manually, in part because the markup tags are required for each cell. This high-level routine reduces the effort, if the data for the table can be stored in a 2-dimensional array.

The string variable caption$ ontains the table caption, if any.

The string variable options$ contains the table options for the <table> tag. The most common option is "border", or "border=1". Table options are not consistent among browsers, so care must be taken when using them.

dat$[all] contains the data to be converted to table cells. This must be a 2-dimensional array with columns as the first dimension and rows as the second. If row 0 exists, it is used for column headings; column 0 is similarly used for row headings. All other data is used as regular cells.

work$ is returned as the HTML table definition.

uttags.wbb

Appends text with specified HTML markup tags, to a HTML string

Syntax
CALL "uttags.wbb", tags$, text$, html$

This high-level routine is used to add HTML markup tags to text. When there are no structure conflicts, multiple tags can be added with a single CALL by separating the tags with commas. In all cases, tags are applied to text$, and the result is appended to html$, along with a CR-LF sequence. If there are no tags, text$ is appended to html$, along with a CR-LF sequence to aid readability.

tags$ is a comma-separated list of tags, some of which may contain options. In many cases, a tag causes both a pre- and a post-tag to be added to text$ because there are many HTML tags with both opening and closing parts.

The tags supported are:

b	adds and
body options	adds <body options> and </body>
br	appends
center	adds and
Comment	adds <!-- and -->
form action	adds <form action="action" method=post> and </form>
form-up	Adds <form action="action" method=post enctype=multipart/form-data> and </form>
h1..6	adds <hn> and </hn>
head	adds <head> and </head>
Hidden name	replaces text$ with <input type="hidden" name="name" value="text$">

Hr	prepends a <hr> tag
Href name	adds and

If name contains an ASCII 2 (02) character, the data before the 02 is used as the "href" portion of the link, and data after the 02 is added to the <a ...> tag after the "href=" element. This is useful for specifying things such as target frames in a link. For example, if the name is "/cgi-bin/showpage?id=1"+02+"target=A", the generated tag would be "...".

Html	adds <html> and </html>
I	adds and
Img altname	replaces text$ with <img src="text$" alt="altname">
P	prepends a <p> tag to text$
Pre	adds <pre> and </pre>
Rem	same as comment
Reset	replaces text$ with <input type="reset" name="text$">
Submit value	replaces text$ with <input type="submit" value="value" name="text$">
Title	adds <title> and </title>

text$ receives pre- and post- html tags in the order listed in tags$, except where text$ is replaced.

html$ returns its original value, plus the formatted value of text$.

uttplbas.wbb

Load data template from Basis data dictionary

Syntax
CALL "uttplbas.wbb", dict$, fl$, control$, tpl$, errmsg$

This low-level routine is designed to quickly return a template for a file defined in the BASIS data dictionary, which is a directory that contains the BASIS data files, LOCAT.1, FIELD.1, and TYPDEF.1. This program works directly with the dictionary files. There is no need to initialize the extended utility or data dictionary environmentsdict$ contains the name of the directory where the dictionary files are stored. If empty, the files must be accessible through normal PREFIX-based directory searching.

fl$ contains the name of the file of the dictionary to be loaded.

control$ is used internally to track open file channels used by this program. It should be null when this routine is first called, and passed unchanged to additional calls of this program. To close the channels manually, the channel values are stored in control$ in the 2-byte binary increments dec(control$(1,2)), dec(control$(3,2)), and dec(control$(5,2)).

tpl$ returns the data template for the specified file.

errmsg$ contains an error message if the template generation failed for any reason.

uttempfl.wbb

Create and open a temporary string file

Syntax
CALL "uttempfl.wbb", tempfile$, tempchan

This low-level routine is used in the Win-CGI environment where temporary files are sometimes needed. It can also be used when files are uploaded and parsed through utcgi.wbb, or by the application developer, if a temporary string file is needed.

tempfile$ returns the name generated for the file. If the environment variable "TEMP" is defined, it is assumed to point to a temporary file directory. Otherwise, in UNIX the "/tmp" directory is used, and finally, the current directory "." is used. To override this directory selection, create a global string (STBL) called $tempdir, and set its value to the directory to be used.

tempchan returns the channel number used to open the file.

uttplcp.wbb

Copy matching values from source to destination templates

Syntax
CALL "uttplcp.wbb",source$, dest$

This low-level routine simplifies the task of copying data from one template to another. It scans the destination template, and any matching field names and array elements in the source template are copied.

utwatch.wbb

Interface with a shared directory CGI request process

Syntax
RUN "utwatch.wbb"

This program continuously scans a directory for files that contain CGI requests. The request file, which must follow the name convention of "filename.in", will contain the name of a Business Basic program to RUN, along with the environment and CGI data. The specified program is RUN and must use "utsend.wbb" for all its HTML output When it is finished, it must CALL "utexit.wbb" and RUN "utwatch.wbb".

Typically, this program runs from one or more background tasks. The more tasks, the more likely that CGI requests will be responded to quickly.

The global variable "$commdir" should be set to the name of the shared directory before utwatch.wbb is run. If it is not set, the current directory is used.

Normally, utwatch.wbb scans the shared directory completely and pauses for one second before scanning again. The number of seconds, from 0 to any value allowed by the WAIT directive, can be specified in the global variable "$waitsec".

The format of a request file is:

program-name
env-1=val-1
env-2=val-2
...
env-n=val-n
<blank line>

CGI standard input stream (with line-feed appended)

---EOF---

The first line is the Business Basic program that utwatch.wbb should RUN. The next lines, up to a blank line, contain the environment variables and their values. Following the blank line is the CGI input stream that the CGI script received on its standard input handle, with a line feed appended to force an additional line. The last line is the text string "---EOF---".

The UNIX shell script bwu2.sh provides the interface mechanism for UNIX CGI requests.

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